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REPORTS

FROM

COMMISSIONERS:

TWENTY-TWO VOLUMES.

—*(1.)*—

ARMY (BREECH-LOADING RIFLES);
COURTS MARTIAL; FORTIFICATIONS;
GUNS (MONCRIEFF SYSTEM).

Session

10 *December* 1868 —— 11 *August* 1869.

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1868-9.

TWENTY-TWO VOLUMES:—CONTENTS OF THE

FIRST VOLUME.

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REPORTS

OF A

SPECIAL COMMITTEE

ON

BREECH-LOADING RIFLES;

TOGETHER WITH

MINUTES OF EVIDENCE,

ETC. ETC.

Presented to both Houses of Parliament by Command of Her Majesty.

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Minute 26,704.

REPORTS

OF A

SPECIAL COMMITTEE ON BREECH-LOADING RIFLES.

Lieut.-Colonel H. C. FLETCHER, Scots Fusilier Guards, *President.*

Captain J. Rawlins, 48th Regiment. | Earl Spencer, K.G.
Captain W. C. Mackinnon, 3rd Regiment. | Edward Ross, Esq.

Captain R. W. Haig, R.A., *Secretary.*

REPORT ON SELECTION OF A BREECH-LOADING RIFLE FOR THE SERVICE.

(With reference to War Office Minute 21st March 1867 $\frac{85}{\text{Gen. No.}\ 1034}$, and to Minute 10th December 1867, $\frac{7669}{1385}$.)

The Committee have the honour to submit their final Report on Military Breech-loaders.

Position of the Committee in respect to the inquiry.

Before proceeding to details, it will be convenient to consider their position in connexion with this inquiry.

The Committee were originally appointed to award prizes offered by the Secretary of State for War for the best military arm, and for the best ammunition submitted in response to an advertisement of 22nd October 1866, $\frac{7669}{534}$.

This advertisement laid down certain strict conditions to which the arms were to conform.

Besides those which had reference to length, weight, and form of arm, which could be ascertained without experiment, there were others which could only be determined by practical tests.

Many arms were at once disqualified from competing for the prizes, and of those that were qualified a certain number only were considered worthy of a long-continued trial, the result of which was given at length in report No. 4905, $\frac{7669}{1459}$ 12th February 1868.

The consequence of adhering strictly to the conditions laid down in War Office advertisement, 22nd October 1866, was that at the very outset many promising arms were excluded from the competition, and it seemed possible that the best military breech mechanism might not be amongst those selected.

The Committee therefore examined very carefully the rejected arms, setting aside those which seemed to merit further trial, *vide* report, No. 4636, $\frac{7669}{1194}$, 4th July 1867.

The Committee to extend their inquiries.

At this stage of the proceedings, the Secretary of State for War decided that the Committee should extend their inquiries, with a view of deciding upon what breech-loading arm they would recommend for adoption into the service, *vide* minute, 10th December 1867, $\frac{7669}{1385}$.

The steps to be taken to carry out this object.

They therefore considered carefully the steps that should be taken for the carrying out of this object.

The competitive trials showed the Committee that in the manufacture of breech-loaders accurate shooting had not been considered as attentively as ingenious methods for closing the breech.

Failure of the competitive arms to reach the required standard.

The Committee had before them rifles of several calibres, of which the principal were the ·577 inch, ·5 inch, and the ·451 inch, but none of the arms submitted for the competition had reached the standard of accuracy laid down by the War Office, a standard which it was well known could readily be surpassed by muzzle-loaders shooting under similar conditions of weight, bore, and charge, and to which standard there appeared no reason that breech-loaders should not attain.

The system of breech mechanism does not affect the shooting of the arm.

It was further clear that the system of closing the breech by one or another kind of breech mechanism, if metal cartridges should be used, could not affect the accuracy of the arm, unless it was such as to preclude a cartridge case of dimensions sufficient to contain a suitable charge.

Questions to be settled independently.

The questions, therefore, of the weight of bullet, bore, grooving, weight and description of barrel, charge of powder and cartridge case, could be settled independently; and having determined these points it was considered that a decision on breech mechanisms which could not readily be compared when fired with cartridges of different lengths would be more easily arrived at. This question was also pressed on the attention of the Committee by several of the inventors, who asked to what barrel they should attach the improved breech mechanism which they desired to submit.

Evidence procured.

Before proceeding any further the Committee obtained the permission of the Secretary of State for War to procure evidence from distinguished gunmakers and others who had studied the subject of military arms.

The following were requested to assist the Committee, vizt. :—

Lieutenant-General C. Hay; Mr. C. W. Lancaster; Colonel H. St. J. Halford; Mr. Alexander Henry; Major G. V. Fosbery, V.C.; Colonel Haliday (Inspector General of Musketry); Mr. J. H. Burton; Colonel W. M. Dixon (Superintendent R. S. A. Factories); Colonel E. M. Boxer (Superintendent Royal Laboratories); Mr. James Kerr; Mr. John Rigby; Mr. Whitworth; Mr. Westley Richards; Captain W. H. Noble, R.A.; Mr. F. A. Abel (Chemist War Department); Mr. Metford; Mr. Eley. Also H.R.H. the Field Marshal Commanding-in-Chief.

They all, with the exception of Mr. Eley and Mr. Metford, gave evidence, *vide* Appendix I.

Objects of the evidence.

The evidence was directed to ascertain—

1st. The most important qualifications of a military arm.

2nd. What bore, barrel, grooving, and ammunition appeared most likely to give those qualifications.

3rd. Whether there was a prospect of obtaining from a breech-loader as high a degree of excellence in these particulars as from a muzzle-loader.

4th. What was the best mode of arriving at these requirements.

5th. The method of stocking, the description of lock, and the quality of powder best adapted for a military arm.

On these points the evidence was clear, and the majority of the witnesses agreed in a very satisfactory manner.

The principal qualifications of a military arm.

All were of opinion that the principal qualifications required for an efficient military arm were strength, lightness and safety, flatness of trajectory and accuracy.

Stress was also laid by some of the witnesses on the importance of procuring a bullet of great penetrating power.

Recommendations to attain these qualifications.

To obtain these qualifications the majority of witnesses concurred in recommending a ·45 inch bore with a solid bullet of 480 grains, a charge of powder of 85 grains, and a central fire metallic cartridge case. The mode of rifling and chambering to remain open questions.

They also seemed satisfied that although the subject had not yet been fully worked out, there was nothing in the nature of breech-loaders to prevent their attaining to a high degree of accuracy of shooting.

Conditions to be laid down.

By many of the witnesses great importance was attached to the necessity of laying down conditions as to cartridge case, bore, and weight of bullet and powder, before commencing trials for accuracy of shooting.

On the method of stocking, the description of lock, and the quality of powder, the evidence was various and conflicting.

The future course of proceeding laid down.

With these opinions before them, which the results of the experiments made during the competitive trials fully corroborated, the Committee were able to decide their future course of proceeding.

Separation of the question of breech mechanism from that of barrel.

They determined on separating the question of breech mechanism from that of barrel. The former to be decided by an open competition of all the systems which either had been or should be brought before them. The latter to be confined to those systems of rifling which had given the best results as muzzle-loaders, viz., those of Messrs. Henry, Lancaster, Metford, Rigby, Westley Richards, Whitworth, and the Enfield represented by Colonels Dixon and Boxer, R.A.

Conditions fixed.

They decided on laying down the length, weight, and calibre of barrel.

Length of barrel.

The length to be 35 inches, as regulated by the War Office advertisement, which fixed the total length of the arm at 51 inches.

Weight.

The weight to be 4 lbs. 6 oz., viz., the weight of the Henry barrel, from which as yet the best results had been obtained, and the calibre to be ·45 inch, as appearing the most suitable for a military arm, not only from the results of the experience already gained and from the evidence received, but also from the reports of previous committees who had recommended that bore as likely to produce the best results. (*Vide* Appendix II., page 68.)

Cartridge case.

They decided on using the Government cartridge case, which as they have already reported (*vide* Report No. 4937, 16th March 1868, $\frac{7669}{1499}$) proved itself to be the best during the long course of the competitive trials.

Bullet, powder, and lubrication.

They also fixed the weight of bullet at 480 grains, of powder at 85 grains, and that the lubrication should be pure beeswax, as best adapted to withstand variations of climate and long keeping.

Henry breech action to be used during trials.

It was considered better that in the trial of the barrels the breech mechanisms should be identical in pattern, and the Snider system was at first selected; but as it appeared from information received from Colonel Dixon that a longer time would be required to produce a sufficient number of this description of breech action for a ·45 inch bore than to obtain the same number from Mr. Henry, it was resolved to adopt the Henry system, which had gained the prize of 600*l*.

Circular letter sent.

A circular letter embodying these conditions (*vide* Appendix XIX., page 85), was sent to the before-mentioned gentlemen on the 9th March 1868, and they were requested to inform the Committee whether they would assist them by preparing barrels under the conditions laid down.

Mr. Metford declines to assist.

Objections of Westley Richards and Colonel Boxer, R.A.

Mr. Metford declined to afford his assistance, but the replies from the other gentlemen were generally satisfactory, the exceptions being Mr. Westley Richards, who although agreeing to furnish barrels, stated that he could not undertake to obtain accurate shooting with ammunition made up as required, and Colonel Boxer, who considered it undesirable to lay down any particular weight or construction of bullet or weight of powder charge.

The committee adhere to the conditions laid down.

After consideration of these objections, the Committee bearing in mind the difficulties they had encountered in their first competition, owing to the latitude allowed in these respects, decided to adhere to all the conditions of the circular letter.

Experiments made during the preparation of the barrels.

During the preparation of the barrels, which occupied considerable time, the Committee continued the consideration of the breech mechanisms which were brought before them.

They were also engaged in trials of cartridges made with compressed powder, which the evidence of Colonel Boxer, R.A., Captain Noble, R.A., and Mr. Abel, chemist, W.D., led them to hope would prove satisfactory.

Having briefly stated the course which the Committee decided on adopting, the results of the trials of breech mechanisms, barrels, and powder are given under separate headings.

TRIALS OF BREECH MECHANISMS.

General course of experiments.

The general course of experiments to which the rifles submitted for trial in regard to their breech mechanisms were subjected was as follows:—

The arms were carefully examined, and, if approved, 20 or more shots were fired for rapidity. Sand was thrown over the breech actions both open and closed, and the rifle fired without any cleaning except what could be done with the hand. Three cartridges, purposely damaged to ensure an escape of gas, were fired to test the safety of the arm with imperfect ammunition.

If the arm passed through these trials satisfactorily, and if the breech action appeared suitable for military purposes, it was put through a course of long-continued firing, being allowed to rust at intervals between the days of firing.

Explanation of experiments.

Some exception may possibly be taken to this course of experiments. It may be urged that too great stress should not be laid on great rapidity, a satisfactory degree of excellence in this respect being all that should be required.

To this it is answered that a test for rapidity of firing involves also a test for simplicity and convenience of manipulation, and that the hurry and excitement which attend a trial for rapidity frequently develope some weakness of the arm which might otherwise escape notice.

The sand trial was imposed in order to represent the effects of dust or sand on arms when used in dry countries, especially in India. It is a severe test, but one which the best breech mechanisms pass through without being impeded in their working.

The long-continued firing and rust tests represent the ill-usage which arms in war time may have to endure; they also tend, like the test for rapidity, to draw forth any weakness which the firing of only a few shots might fail to develop.

The state of the inquiry.

Having thus shortly explained the nature of the experiments made to test the merits of the several breech mechanisms, it remains to describe the course of the trials and the results which were thereby arrived at.

The committee had before them for consideration—

The list of arms.

1st. The arms which had gone through the competitive trial, viz.:—

Albini and Braendlin, Burton, No. 1, Burton, No. 2, Fosbery, Henry, Joslyn, Martini, Peabody, Remington.	Vide Report, No. 4905, 12th Feb. 1868. $\frac{7669}{1459}$

2nd. Those which had been disqualified, but which had been set aside for further consideration, viz.:—

Berdan, Carter and Edwards, No. 3, Fosbery, No. 4, Greve and Dowling, No. 4, Hammond, Needham, No. 1, Poulteney, Westley Richards, No. 1, Westley Richards, No. 3 b, Sharp, Wilson.	Vide Report, No. 4636, 4th July 1867. $\frac{7669}{1194}$

3rd. Those which had been submitted since the dates of the above-mentioned reports, and previous to the 26th October 1868, after which date none were received, viz.:—

Adams,
Amsler-Milbank,
Bacon,
Berdan—with spiral spring lock,
Do. with side lock,
Do. sliding bolt,
Benson,
Braendlin-Snider,
Cole - - 0·577 inch
Do. - - 0·45 „
Conroy,
Cooper,
Chassepôt,
Davies,
Fosbery—an improvement 0·5 inch on systems previously submitted,
Do. 0·45 inch falling block,
Gordon,
Kerr,
Money-Walker,
Peabody, adapted for Boxer compressed powder cartridges,
Do. lever above instead of below, adapted for brass drawn central-fire cartridges,
Peabody-Gielgud,
Peabody-Gielgud-Wessely,
Prussian needle gun,
Punshon-Snider,
Reilly-Comblain,
Ross (P. Campbell),
Russian converted (needle rifle),
Russ and Hammond, metallic cartridge,
Do. paper do.
Roden-Snider,
Stoakes - - 0·577 inch
Do. - - 0·45 „
Stiff,
Tranter,
Wanzel,

Werndle,
Wilson,
Witney,
Wiley - - 0·577 inch
Do. - - 0·45 „
Westley Richards, paper cartridge,
Do. do. do. with a subsidiary lever for cocking,
Do. do. falling block, metallic cartridge,
Do. do. elevating block do. do.

The arms in the first list had been so carefully tested that no further information was required during the preliminary period of the investigation. The arms in the first list.

Out of the second and third lists a certain number were at once rejected, and those which appeared to possess most merit, having been put through the trials for rapidity and the tests with sand and damaged cartridges, were subjected to a further elimination. The causes of rejection are given in the Appendix III., page 69. The arms in the second and third lists.

The remainder, together with a few arms selected from the first list, were set aside to go through the trial of long-continued firing. The arms selected for further trial.

The eliminations were made at different periods of the inquiry, as the several arms were brought before the notice of the Committee; but (to avoid confusion) it has been thought well to include in one list all those selected as arms which appeared likely to fulfil the desired qualifications of a military breech-loader. The list is as follows, viz.:—

Bacon,
Berdan (one system),
Carter and Edwards,
Henry,
Kerr,
Martini,
Money-Walker,
Westley Richards (two systems, differing from those previously submitted),
Wilson.

For a description of these arms, *vide* Appendix IV., page 70.

It should be observed that several arms were placed in this list, not because they had proved themselves superior to those which had gone through the competitive trials, and which have been omitted, but because further experiments were needed to enable the Committee to compare their merits with the Henry and Martini arms, selected as possessing merits superior to those of the other arms which had passed through the competitive trials. Why these arms were selected.

As the selected arms were likely to be damaged during the course of experiments which it was proposed to carry out, it was decided, with the sanction of the Secretary of State for War, to purchase one arm of each system. One arm of each system bought.

All these arms were adapted to fire metallic cartridges, but, from the result of preliminary experiments, none were believed to be dependent for safety on the strength of their cartridge cases, but all were thought able to withstand the explosion of a defective cartridge. These arms adapted for metallic cartridges.

They may be divided broadly into two great systems, the bolt and the block, of which the Division into two systems.

Bacon,
Carter and Edwards,
Kerr,
Wilson,

represented the bolt; and the

Berdan,
Henry,
Martini,
Money-Walker,
Westley Richards (two systems),

the block.

It was after considerable doubt that the Committee selected for trial breech mechanisms on the bolt system, as from evidence they had received, and from their own observation, they were inclined to believe that there might be some danger lest a cartridge in a rifle on this system should explode, or be fired, before the bolt had been firmly secured. Doubt entertained of the bolt system.

Recommendations in favour of bolt systems.

On the other hand, the bolt system was simple in manipulation and manufacture; it had found favour with the armies of Prussia and France, and, in the systems selected for trial, apparently satisfactory mechanical arrangements had been made to secure the safety of the arms.

It was, therefore, decided to put the above-mentioned bolt systems through the long and exhaustive course of experiments to which the other rifles were to be subjected.

On selection of a cartridge.

It now became a matter of some importance to fix upon a cartridge with which the trials for breech mechanism should be made, as the working of some of the systems depended upon the length of cartridge they might be required to receive and to eject.

Difficulty in making a selection.

On this point there arose a difficulty. The trials for accuracy were not concluded, consequently neither the cartridge nor the bore had been definitely determined upon, and it still remained a matter of doubt whether compressed or loose powder would be the best adapted for securing accuracy of shooting.

Option as to bore left to inventors.

As the Committee were unwilling to postpone the trials for breech mechanism until those for accuracy were finished, it was decided to make it optional with the inventors of the selected breech mechanisms whether they would send in rifles suitable for a ·5 or ·45 inch bore cartridge.

It was also intended to make final experiments under similar conditions in regard to bore and cartridge, if, after the termination of the trials, the comparative merits of any of the arms should still remain doubtful.

Alterations made in Berdan and Martini arms.

As the Boxer cartridge case was used in the trials for accuracy, a preference was also given to it for the trials of breech mechanisms, consequently it became necessary to make alterations in two of the selected arms, viz., the Berdan and the Martini, to adapt them for this description of cartridge case. These alterations were made at the Royal Laboratory by the desire of the Committee, as the manufactory of the Berdan arms was in America, and of the Martini in Switzerland, and there were no working representatives in England.

Martini's specifications.

It should be observed that Mr. Martini in the specifications sent in with his competitive arms had stated that his system was adapted equally to central fire as to rim fire cartridges.

Westley Richards and Money-Walker arms.

The Westley Richards arms having been manufactured to receive a drawn brass cartridge case, and the Money-Walker to receive the Daw cartridge case, it was decided, to avoid delay, as their breech mechanisms were submitted at a late period of the inquiry, to make the necessary experiments with the cartridges for which they had been prepared.

The experiments made with the breech mechanisms carried on for the concluding trials have been already alluded to, and may be summarized as follows:—

Summary of experiments.

The rifles were fired for rapidity, and with cartridges purposely damaged at the base and side. Fine sand was thrown over the breech actions when open and when closed.

They were then subjected to a long course of firing, being allowed to remain uncleaned and under the influence either of rain, or of water artificially applied to the breech actions both open and closed, for several days and nights.

Exceptional trials of arms on the bolt system.

The arms on the bolt principle were also put through a trial with cartridges made exceptionally sensitive, to test their safety in the event of ammunition being thus accidentally manufactured.

For this purpose the Superintendent of the Royal Laboratories prepared cartridges containing 12 different descriptions of defects, which might possibly although rarely occur in the manufacture of large quantities of ammunition.

Mode of conducting the trials.

To test the safety of the arms, the cartridges so prepared, and loaded with coal dust instead of powder, were placed in the chamber and the bolt pushed against them with considerable force. They were also laid in the shoe and forced sharply home with the bolt. Should they have passed through these tests satisfactorily, an obstruction was placed in the shoe or chamber, to prevent the cartridge from freely entering the chamber, and the bolt was driven against the cartridge to force it into its place.

Why these trials were made.

These experiments were intended to represent what might possibly occur on service, with arms on the bolt system, as when firing rapidly the soldier would naturally endeavour to force home the cartridge by means of the bolt.

The last experiment was suggested by the accident which occurred in 1867 to Sir H. Halford, which he described in his evidence (*vide* Appendix I., page 15, questions 319 to 326).

The action of the breech-blocks of guns on the block system did not admit of similar experiments being made, on which account it was believed that they were not liable to similar accidents.

The following is a summary of the results of the several trials :—

Rapidity Trial.

Twenty-one rounds were fired from the shoulder, the cartridges being placed on a table, and the time of firing 20 rounds was obtained by observing the interval between the 1st and 21st shots.

Systems	Fired by	Min.	Sec.
Bacon, ·45 inch bore	Lieutenant Bacon	1	0
	do.	0	58
Berdan, ·45 inch bore	Serjeant Bott, R.M.	1	10
Carter and Edwards ·5 inch bore	Serjeant Bott	0	51
Henry, ·45 inch bore	Serjeant Ward, R.A.	1	17
	Private Crofts, R.M.	1	7
(*Vide* Appendix to Report, No. 4905 $\frac{7669}{1459}$, 12th February 1868.)			
Kerr, ·45 inch bore	Mr. Kerr	1	15
Martini, ·433 inch bore	Serjeant Bott, R.M.	1	2
Money-Walker, ·5 inch bore (Daw ammunition).	Mr. Walker	1	14
	Serjeant Bott	1	23
Westley Richards (falling block) ·45 inch bore	Foreman (Brass-drawn cartridge.)	1	7
Westley Richards (elevating block) ·45 inch bore	Foreman (Brass-drawn cartridge.)	1	0
Wilson, ·5 inch bore	Mr. Wilson	1	26

As the rifles were of different calibres, and as they all showed a satisfactory degree of rapidity, it was not thought necessary to have them fired by the same man, in order to obtain a more exact comparison than that here given.

Damaged Cartridges.

The cartridges were filed so as to ensure a considerable escape of gas. Three rounds were fired, the damaged part of the cartridge being placed in different positions.

The following are the results :—

Bacon	The extractor was blown away.
Berdan	Not affected by the trial.
Carter and Edwards	Do. do.
Henry	Do. do.
Kerr	Do. do.
Martini	Do. do.
Money-Walker	Do. do.
Westley Richards (Elevating block.)	Do. do.
Westley Richards (Falling block.)	Do. do.
Wilson	Do. do.

Sand Trial.

Bacon	Went through satisfactorily.
Berdan	Do. do.
Carter and Edwards	Do. do.
Henry	Do. do.
Kerr	Do. do.
Martini	Do. do.
Westley Richards (Elevating block.)	Do. do.
Westley Richards (Falling block.)	Do. do.
Wilson	Do. do.

Test for Exposure.

The test for exposure was as follows :—

A hundred rounds were fired on four consecutive days, and the rifles were left in the open air exposed to rain or to water artificially applied during the intervals, the breech actions being left alternately closed and open.

The rifles, still uncleaned, were left exposed during three or four days and nights, and were again fired for the purpose of ascertaining whether they were serviceable. They were then taken to pieces and examined.

The following results were obtained from this trial :—

Bacon. This rifle was not put through the exposure test, for the following reason :—When Serjeant Ward, R.A., was selecting some cartridges with which to try it, he placed a cartridge in the shoe and pushed it home with his thumb. He was in the act of closing the bolt when the cartridge exploded. The breech mechanism was separated from the barrel and destroyed, and that portion of the stock containing it was broken into pieces. The cartridge used was an ordinary one manufactured in the Royal Laboratory. The serjeant's face and hands were slightly injured.

Berdan. In this system, unless the block be carefully closed, the hammer is apt to fall on the hinge in place of on the striker. This defect was especially remarked after the first night's exposure. As the trial proceeded the breech block became jammed, and was opened with some difficulty. At the close of the trial the piston remained out, and force was needed to press it back. On being taken to pieces the side lock, as also the interior of the block, was rusty.

The quick and proper working of the breech block depends upon the hinge, (called by General Berdan "the brace,") which readily becomes affected by exposure.

Carter and Edwards. At the end of the exposure the bolt was set fast with rust, but was loosened by blows from a mallet, after which it worked stiffly. On stripping the gun the breech bolt and its bearings were much rusted, but the lock and piston worked well, and were comparatively free from rust.

Henry. The piston once jammed forward in the cap of the cartridge. The piston spring was found during the trial to be unserviceable, the piston remaining forward whenever pressed by the hammer. Another piston spring was substituted, one cartridge was accidentally placed in front of the extractor, and being thus held between the claw of the extractor and the end of the breech, was with difficulty forced out with a ramrod. Towards the close of this trial the piston remained out, but acted properly after a few rounds had been fired. At the end of the trial the extractor worked stiffly, and did not return of itself when the breech was opened. After oil had been applied it acted properly. On stripping the rifle the spring of the extractor was found to be broken, notwithstanding which it worked well. The spring was free from rust.

Kerr. After a considerable number of rounds, a small portion of the point of the keeper screw was found to be worn or broken by the repeated working of the breech bolt, but by screwing it a little further in, it again became serviceable. Towards the close of the trial the piston remained out, the sear spring was rusted and broken, and a new sear spring was substituted. Some difficulty was also noticed in ejecting the cartridge case. This was caused by the wearing away of the head of the keeper screw, consequently there was nothing to hinder the bolt, together with the extractor holding the empty cartridge case, from being drawn back beyond the proper distance. If this were done the base of the cartridge case caught in the shoe and did not fall out readily. On stripping the rifle there was a good deal of rust on the side lock, and the main spring was broken in two places.

This rifle was exchanged, at Mr. Kerr's request, for one he submitted with improvements, in which the keeper screw was at the side instead of underneath the breech action. This latter rifle was not submitted to the exposure tests, as, irrespective of the defect in the keeper screw, the Committee had formed their opinion on Mr. Kerr's system.

Martini. During the trial several of the cartridge cases cut, and more pressure than usual was required to open the breech block. Some of the iron discs of the cartridge cases also broke, in which case the extraction was difficult. These defects are entirely attributable to faulty cartridges, as was subsequently proved by the substitution of a fresh supply. The arm worked well during the trial, and when stripped the breech mechanism was in perfect order, and free from rust or dirt.

Money-Walker. In firing this arm the breech block required to be closed carefully, or with a smart blow. Care was also required in pushing the cartridges home, to prevent their catching in the extractor. As the trial advanced the breech mechanism worked with difficulty, and finally could not be opened with the hand, and the rifle became unserviceable. On stripping it the parts were found rusted.

Westley Richards, (elevating block, side extractor,) During the firing of the first 100 rounds the breech action was very hard to open after every shot, but worked easily enough when there was no cartridge in the rifle; the stiffness was therefore attributed to the setting up of the brass cartridge cases, which Mr. Westley Richards stated could be improved. At the close of the trial the breech

action was jammed, and on stripping the arm the whole of the breech action, including the main spring, was much rusted, and the arm was quite unserviceable. submitted with special cartridge.

At Mr. Westley Richards' request, this rifle was taken away and another with elevating block substituted. Westley Richards, (elevating block).

This arm worked stiffly, and during the first few rounds jammed, requiring blows to open the breech. This was probably owing to defects in the cartridge case, as previously mentioned. After the second night's exposure several parts of the breech action were found rusted, a few more rounds were fired, but the breech block jammed after every shot, and it was decided that it was unnecessary to continue the trial further. Mr. Westley Richards stated that by the application of a certain lubrication to his rifles, all possibility of their becoming rusted by exposure would be removed.

After the second night's exposure 50 rounds were fired, but as several cartridges burst at the rim, causing escape of gas and consequently some risk to the firer, it was decided to continue the trial for exposure without firing. At the conclusion of the trial the working of the action had not been affected by the exposure, but on stripping it all the parts were much rusted. It was also remarked that the wood of the stock on either side of the breech block was much warped and opened away from the breech action. Westley Richards, (falling block) No. 1.

During the firing on the first day, there was sometimes a difficulty in opening the breech. After the first night's exposure 60 rounds were fired, when the arm burst while being fired from the shoulder by Earl Spencer, who was slightly injured in the face. The breech bolt was blown back about an inch and the fore part of it was bent upwards and jammed. The piece of metal with lugs for taking the recoil was blown off with considerable force; it appeared to have struck the stock and glanced, as the wood was dented. Wilson.

Sensitive Cartridge Test.

A cartridge containing a cap with a rounded anvil, without shoulders, was purposely jammed in the entrance of the chamber, and force was used to push it home with the bolt; whilst doing this, and before the bolt was secured, the cap exploded. It was observed that the piston had been forced out by the concussion and had struck the cap. A like result was produced with a cap made up with a pointed anvil, without shoulders, but in this instance the cartridge had not been jammed in any way. Another cartridge with a similar defect was exploded in pushing forward the bolt, the cartridge not being jammed. Bacon.

The different sorts of sensitive cartridges were tried in this rifle; none, however, were exploded. The piston was not forced forward, and the concussion, which in some instances was very great, failed to fire or even to indent the cap. The cartridges were fired afterwards in the usual way to prove that they could be exploded. Carter and Edwards.

Similar experiments were made with this arm. A cartridge with a cap containing a long rounded anvil was purposely jammed in the entrance of the chamber, and force was used to push it home with the bolt; whilst doing this, and before the bolt was secured in its place, the cap exploded. It was remarked that the cap had been indented by the piston. A similar result was obtained when using a cartridge made up with a cap containing a pointed anvil, without shoulders. Kerr.

The improved rifle submitted by Mr. Kerr was subjected to these tests, and in every instance the cap was deeply indented by the piston, although no cartridge was exploded.

With this rifle only three sensitive cartridges were tried. They were not fired, but there were evident signs of the caps having been struck by the piston. Wilson.

During the course of these experiments the Committee were confirmed in the idea which they had previously entertained, that the bolt system of breech mechanism was not so safe as the block, from its greater liability to accident. Bolt system more liable to accident than block systems.

As has been already stated, two accidents had occurred during the trials from bolt guns, of a dangerous character, but happily without serious results. The rifles were so much damaged by the explosions that it was impossible to determine exactly the causes of these accidents. Accidents with bolt guns.

It appeared to be probable that the Bacon rifle exploded whilst the bolt was being pressed quietly home, either through a fault in the catch which held back the piston spring, or by the blow of the bolt on the base of the cartridge. Accident with the Bacon.

Accident with the Wilson.

The Wilson rifle exploded as it was being fired in the usual way. It is supposed that the bolt had not been secured, and that the special arrangement which was intended to prevent the piston from striking the cap until the breech was firmly closed had miscarried.

In both accidents pieces of the breech mechanisms were blown away; in that with the Wilson, the bolt only escaped being driven back into the firer's face through its being bent upwards by the explosion, and so becoming jammed in the shoe of the breech-block.

On bolt guns.

Irrespective of the evidence obtained from these accidents, the question of the security of bolt guns had been carefully considered during the course of the experiments, and a distinction had been drawn between those which worked by means of main and sear spring locks, like the Carter and Edwards, and Kerr, and those which worked with spiral springs, as the Bacon and Wilson.

On the Carter and Edwards and Kerr rifles.

Unless under exceptional circumstances the Carter and Edwards, and Kerr, were doubtless perfectly safe.

But, as has been already pointed out, when cartridges became jammed in the chamber and force was used to push them into it, the piston of the Kerr rifle, notwithstanding the precautions taken to keep it withdrawn, marked the caps sufficiently to explode them.

In the Carter and Edwards rifle this defect does not exist, no mark of the piston on the cap having on any occasion been noticed; but evidence had been received that among the many millions of cartridges manufactured, some caps so over sensitive would be found that even a fall of the cartridge on the floor of the manufactory would cause an explosion. If such were the case, the mere blow of the bolt (especially if the cartridge had become in any way jammed), irrespective of any projection of the piston, would appear sufficient to explode the cartridge.

Rejection of arms on the bolt system.

Under these circumstances, and having before them arms on the block system which appeared to unite all the required qualifications, without the disadvantages above mentioned, it was decided to reject from further consideration arms made on the bolt system.

Good qualities of the Carter and Edwards and Kerr rifles.

It was with great regret that the Committee arrived at this conclusion. They appreciated very highly the excellent qualities of the Carter and Edwards and Kerr rifles, and took into consideration the fact that the piston of the former had not marked the caps when undergoing the trial with sensitive cartridges.

Carter and Edwards.

There were, however, disadvantages connected with the Carter and Edwards system, which added their weight to the decision to reject it. First, the great length of the breech mechanism, especially when prepared for a ·45-inch cartridge. Secondly, the liability that exists of the rifle, when held at the "present," being accidentally placed on half cock by the left hand coming in contact with the handle of the bolt. Thirdly, the rusting of the long surfaces of the bolt and shoe, as was proved by the exposure tests. Notwithstanding these defects, the Committee entertain a high opinion of the facility and rapidity of manipulation of the breech mechanism of this system of arm.

Kerr.

The Kerr rifle also showed many excellent qualities, especially in its method of securing the bolt, and at the same time pushing the cartridge home into the chamber; also in its ingenious mode of extracting the empty cartridge case.

Consideration of arms on the block system.

The arms on the bolt system having thus been disposed of, those on the block system were next considered.

After weighing the results of the trials, the Berdan, Money-Walker, and Westley Richards (elevating block) were at once rejected, and there remained the Henry, the Martini, and the Westley Richards (falling block). Of these, the Henry and the

The Westley Richards arm.

Martini were deemed to possess superior excellence, as, although the Westley Richards worked with facility after the exposure test, yet the several parts of the breech block were much rusted and a weakness in the system of stocking was developed. The method of extracting the cartridge in the Martini arm was also preferred to that of the Westley Richards arm.

In regard to the rusting of his breech block, Mr. Westley Richards stated that a remedy could be easily applied by steeping the parts in a special lubrication; but as this had not been used in the other systems, which had gone through the trials without any need of lubrication to keep off rust, the experiment suggested was not thought desirable.

These decisions the Committee saw no reason to alter from subsequent representations, and patterns of proposed improvements submitted to them by Messrs. Simpson (on the part of the Carter and Edwards arm), Kerr, Westley Richards, and Wilson.

Application from Mr. Westley Richards.

On a special application from Mr. Westley Richards, dated 22d October 1868, in answer to a letter informing him of the rejection of his systems of breech mechanism, the Committee, having regard to the merits of the falling block arm, were prepared to consider an arm resembling, in nearly all respects, that already rejected, but on the 2d November 1868, Mr. Westley Richards decided on withdrawing his rifles, and the arms were accordingly returned to him. Judging from the results of the previous trial, the Committee are of opinion that this system is not equal in serviceability to either of those which were retained for consideration, viz., the Henry and the Martini.

The Henry and Martini systems.

Of these two systems, the Martini gave the best results in the trial for endurance, and consequently showed that the defects mentioned in the previous Report, No. 4,905, of the 12th February 1868, had been owing to the bursting of the defective ammunition submitted with the arm sent in for the competition.

Trials of Martini made with Boxer cartridge and compressed powder.

The present trials of this system (as before mentioned) were made with the Boxer cartridge case and compressed powder, which it was hoped at the time the trials were made would prove suitable for arms of a ·45-inch bore. But during these trials (as will be seen in a subsequent part of the Report), it was ascertained that ammunition made with loose powder was preferable as regarded accuracy to that made with compressed powder, and the loose powder entailed a longer cartridge case. It became, therefore, necessary to test the Martini system with the longer case, to ascertain whether any defect would thereby be developed.

The Martini arm to be tried with longer cartridge.

Mr. Martini was in Switzerland, and from previous experience (*vide* Report, 12th February 1868), the Committee were aware that great delay would ensue if the arm and gauges for cartridges on which to model a new breech block were transmitted to Switzerland.

The arm to be made at Enfield.

It was consequently decided (written communication having been made to Mr. Martini) to request Colonel Dixon, Superintendent Royal Small Arms Factories, to prepare an arm on the Martini system, to take the long cartridge case ·45-inch bore, and at the same time to make one or two minor alterations not affecting the principle of the breech mechanism.

The arm received.

The arm was received on the 21st October 1868, with some slight improvements not in any way affecting the principle, nor embodying any ingenious novelty belonging to other arms, such as seems to be referred to in section 5, War Office advertisement, 22d October 1866. At the same time it failed to represent perfectly the Martini system, as was pointed out by Mr. Martini, who in the meantime had arrived in England.

The Martini arm put through the trials.

The weight was slightly in excess of that laid down in the War Office advertisement, and adopted by the Committee as the maximum of weight for the future arm; but Mr. Martini pointed out how this could be reduced, and the arm was consequently put through the trials already mentioned, viz., the sand, damaged cartridge, exposure, and rapidity tests.

All these trials it passed through most satisfactorily. The rapidity, when fired by Serjeant Bott, R.M., was 20 rounds in 53 seconds, and when fired by Captain Mackinnon, after the arm had been exposed to the influence of rain or of water artificially applied for seven days and nights, and after it had fired during this period 400 rounds, was 20 rounds in 1 minute and 3 seconds. The breech action worked as smoothly after the exposure tests as it had done when the arm was clean, and in every case the extractor ejected the cartridge.

When taken to pieces and examined, the block containing the spiral (main) spring was entirely free from rust, and the other portions of the breech mechanism only slightly discoloured by it.

The Martini system suitable for a long cartridge case.

It was now apparent that the Martini system of breech mechanism was adapted equally for the longer as for the shorter cartridge, but it remained to be proved whether, with the weight reduced and made entirely on Mr. Martini's plan, it would be equally serviceable.

A new Martini to be made at Enfield.

An order for a breech mechanism, to be constructed under Mr. Martini's supervision, was therefore made on the Superintendent Royal Small Arms Factories.

Proposed improvements in the Henry arm.

In the meantime, Mr. Henry had submitted at different dates two models of proposed improvements in his system of breech mechanism; one to overcome the possibility of placing the cartridge in front of the extractor, the other to remedy the liability of the piston occasionally sticking in the caps of the cartridges, and so hindering or preventing the opening of the breech block.

The improvements of the Henry and Martini arms to be tested by trial.

As the Henry and Martini breech mechanisms appeared to the Committee to be those most likely to fulfil all the requirements of a military breech-loader, it was decided to procure one breech mechanism embodying Mr. Henry's latest improvements fitted to any barrel, to compete under similar conditions with the Martini arm in course of construction

at Enfield. The option was given to Mr. Henry either to make his own breech mechanism or to have the work performed at Enfield, and Mr. Henry elected to make the breech mechanism at his own manufactory.

The arms are received.

The arms were received and examined. The Martini arm made entirely on Mr. Martini's plan was found to be within the required weight. The Henry arm embodied a slight improvement to ensure the withdrawal of the piston after firing.

The arms were put through a course of long-continued firing, rough usage, and exposure, and the results were satisfactory.

Final selection to be made.

It now remained for the Committee to make a final selection from these two systems, both of which had given proofs of high excellence.

Points to be considered.

The principal points to be considered were—

Safety,
Strength,
Number and simplicity of parts,
Facility of manipulation,
Cost.

Safety.

Safety.—In regard to safety, both systems appeared equally secure against accident.

Strength.

In regard to strength, both systems necessitate divided stocks, which the Committee believe to be stronger, and without doubt cheaper than whole stocks. The method of securing the ends of the stocks to the breech-action in both the Henry and Martini arms appears sufficiently strong.

Number and simplicity of parts.

In the number and simplicity of the parts, the advantage lies with the Martini, the number in the Henry system, including the parts in the lock, are 49; the number in the Martini are 30.* (The screws and pins in both instances are included.)

Besides a greater number of detached pieces, the Henry arm has the manufacturing disadvantage of an extractor plate soldered on the barrel.

In simplicity of construction of these several parts, the Committee believe that the Martini has the superiority.

For drawings of the several parts of these arms, see Plates I. and II.

Facility of manipula-

In regard to facility of manipulation, both systems show remarkable excellence; they can be fired with great ease and rapidity. The absence of cocking gives a slight superiority to the Martini. In the Henry there is a possibility of placing the cartridge in front of the extractor. If this be done, there is considerably difficulty in withdrawing the cartridge over the claw of the extractor.

Cost.

In cost of manufacture the Committee believe from evidence received that the advantage lies with the Martini.

On side locks.

One other question occupied the attention of the Committee, viz., that of side locks. From the results of experience and from evidence, they believe that side locks are sometimes liable to become woodbound when exposed to wet. This disadvantage is obviated in the Martini lock, which is entirely contained in the metal breech-block.

Selection of the Martini breech mechanism.

After a careful consideration of the relative advantages and disadvantages of the two systems, and of the results of the many trials to which both have been subjected, the Committee decide on giving the preference to the Martini breech mechanism, and on recommending it as the one best qualified for a military arm of any that has been brought before them.

Comparison between the Martini and Snider.

It now remains to make a comparison under similar conditions between the Martini and the Snider breech mechanisms in use in the service.

Safety.

In safety the Martini is superior to the present Snider arm, as in the event of a defective cartridge being fired the block of the Snider is liable to be blown open. This defect has (it is believed) been remedied by the addition of a catch bolt in Snider arms of a more recent pattern.

Strength.

In strength the Committee believe that the divided stock on the Martini principle is stronger than the whole stocking of the Snider, the cutting away of the wood for the lock being a weakness in the Snider arm. They would add that both systems appear to be sufficiently strong. In strength of breech-action, after a careful comparison of the several parts, including pins, screws, and springs, the advantage lies with the Martini.

Number and simplicity of parts.

In number and simplicity the advantage lies with the Martini, the number in the Martini being 30,* in the Snider 39, and if the safety catch of the last pattern Snider be added, 43 parts. (For drawings of the several parts of the Snider arm without safety catch, see Plate III.)

* In the new pattern of the Martini breech machanism the three pieces belonging to the indicator have been dispensed with, as the new indicator forms one piece with the tumbler pin, thus reducing the number of parts to 27.

In regard to facility of manipulation the advantage lies with the Martini, especially if the long cartridge suitable for a ·45 inch bore be used. The loading of the Martini arm is fully as easy, if not easier, than that of the Snider. The extraction is far simpler, as it avoids two motions necessary in the Snider, one for extracting the cartridge from the chamber, the other for throwing it out by canting the arm to the right. Facility of manipulation.

In cost, from a comparison of the several parts of the two systems, especially if the question of stocking be considered, the Committee believe that the Martini system will be found cheaper to manufacture than the Snider. With regard to the stocking, it seems evident that the divided stocks are less costly than the whole stocks, possibly in manufacture, certainly in material. Cost.

According to an estimate received from Mr. Martini, it appears that he would undertake an order for 25,000 arms similar in pattern to that submitted for the previous competition, and including barrel and bayonet, at 63 francs per arm, or without barrel and bayonet, at 45 francs. The arms to be manufactured in Switzerland. This estimate Mr. Martini stated would give a considerable profit to the manufacturer.

According to an estimate received from Colonel Dixon, R.A., Superintendent Royal Small Arms Factories at Enfield, the Martini arm of the pattern made under Mr. Martini's supervision at Enfield could be manufactured without barrel, and including bayonet, at 2*l.* per arm.

The same remarks in respect to side locks made in the comparison of the Henry and Martini arms apply to a comparison of the Martini and Snider arms. Side locks.

After a careful comparison of the merits of the two systems, the Committee decide on recommending the Martini system of breech mechanism in preference to the Snider system. Preference given to the Martini over the Snider breech-action.

TRIALS OF BARRELS IN RESPECT TO ACCURACY, TRAJECTORY, PENETRATION, &c.

As has been already stated, the trials of barrels were kept perfectly distinct from those of breech mechanisms. Mode of conducting trials.

They were made from fixed rests, and, as far as was possible, under similar conditions.

The breech mechanisms to which the several barrels, with two exceptions, were attached, were identical in description and construction, and therefore their fittings in the fixed rests were similar.

Four barrels, with an interchangeable Henry breech mechanism, to be supplied by Mr. Henry, were required from each of the several gentlemen who had engaged to send in samples of rifling and ammunition, viz. :— Barrels, from whom supplied.

Messrs. Henry,
Lancaster,
Rigby,
Westley Richards,
Whitworth,
and
Colonels Dixon and Boxer.

And it was determined to fire 100 rounds from each of the barrels, at the several ranges, *i.e.* :— Number of rounds to be fired.

The 300 yards.
500 ,,
800 ,,
1,000 ,,

In targets of 20 shots each. Two barrels firing the 100 rounds without cleaning out; two with cleaning out after every 20 rounds, varying the barrels at each range.

A hope had been entertained that the trials might have been made simultaneously, but the different dates at which the barrels were received from the several manufacturers precluded the possibility of so doing. It was therefore determined that, should any of the systems give nearly similar results, they should be tested simultaneously, by firing them either down the range or at any selected distance. Mode of conducting comparative trials.

The exceptions in the fittings of the barrels (previously alluded to) arose from the trial of the ·5-inch rifles with Snider breech mechanism (to which reference will be made), and from a request of Mr. Westley Richards, that the Committee would test a complete arm with special cartridges and his own breech mechanism, in addition to one barrel sent in, in accordance with the conditions laid down by the Committee. The ·5-inch Snider and Westley Richards arms.

In conducting the experiments the Committee reserved to themselves the right of discontinuing the trials of the rifles which showed a marked inferiority of shooting to others, Right to discontinue trials reserved.

and which in no respect attained to the standard of accuracy laid down in the War Office advertisement, 22d October 1866.

Circular letter of 9th March 1868.

The circular letter containing the conditions was sent out on the 9th March 1868, and the barrels were received by the Committee on the following dates:—

Mr. Henry's	During the 1st week in June.
Mr. Whitworth's	The 2d week in August.
Colonel Dixon's	The 2d week in September.
Mr. Westley Richards	The 3d week in September.
(The arm submitted with drawn brass cartridges)	The 4th week in October.
Mr. Lancaster's	The 1st week in October.
Mr. Rigby's	The 4th week in October.
His ammunition	The 2d week in November.

It will be observed that Mr. Henry's barrels were received by the Committee at a much earlier date than those of the other gentlemen. This was partly owing to Mr. Henry having chambered his rifles without waiting for the gauges prepared at the Royal Laboratory, and partly to his having long turned his attention to the production of breech-loading rifles adapted to metal base cartridges for a ·45-inch bore.

Colonels Dixon and Boxer's report on ·5-inch.

In the interval between the sending out of the above-mentioned circular letter and the receipt of the barrels, a report from Colonels Dixon and Boxer, made to the Secretary of State for War on the 20th April 1868, had been submitted for the perusal of the Committee, in which, after a long course of experiments, these officers advocated a ·5-inch bore rifle, rather than a ·45-inch bore, on account of the greater tendency to fouling observed in the latter bore.

Decision to try a ·5-inch arm.

As this report was favourable to a ·5-inch bore, the Committee decided on trying the rifles made at Enfield of this bore, fitted to the Snider breech mechanism, in comparison with those of a ·45-inch bore, received in answer to their circular letter.

Details of shooting.

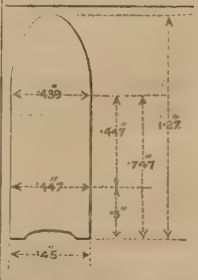
The details of the trials for accuracy of the several systems are now given.

The trials commenced on the 23d June 1868, by firing the ·45-inch bore Henry (four barrels) in comparison with two barrels of the ·5-inch Snider, and were continued at intervals as the barrels were received from the several gentlemen who were preparing them.

The following is a description of the barrels and ammunition, together with a summary of the results of the shooting at different distances, of which 500 yards was selected as the first at which the rifles should be tried. For a more detailed account of the shooting, see Appendix V., page 72.

Description of the Barrels and Ammunition.

Barrels of uniform Weight and Length. Weight 4 lb. 5 oz, length 35″.
Ammunition, Boxer Cartridge Case; Powder, Curtis & Harvey's No. 6,* 85 grains.

Rifle.	Bore.	Twist.	Number and Description of Grooves.	Cartridge. Description.	Cartridge. Length.	Cartridge. Weight.	Description of Bullet.	Length.	Diameter.
	inch.								
enry -	·45	One turn in 22″ uniform.	Nine flat cuts, leaving a beading between each, centre of cut and edge of beading equidistant from axis of bore.	Bullet held in case by being crimped after insertion; one jute wad next to powder, then wax wad, then one or two jute wads, then bullet.	3″·76	Grains 718	Compressed bullet, solid, slight cavity in rear, of 12 parts lead, 1 part tin; it tapers from base to smallest diameter, the sides between diameters being slightly hollowed, head conoidal; paper wrapper dipped in wax at base. Weight 480 grains.	1″·27	
nfield -	·5	One in 25″ uniform.	Five segmental grooves, width of lands and grooves equal or ·157 each, depth progressive from ·005 to ·012.	Case choked into rear cannelure of bullet; cotton wool between powder and bullet; powder, 80 grains, F. G. R.	3″·288	Grains 670	Compressed cylindro-conoidal, five saw-shaped cannelures filled with wax; pure lead, deep cavity in base with clay plug, hollow head, turned over with thin lead. Weight 440 grains.	1″·21	·498
nfield -	·45	One in 20″ uniform.	Six segmental grooves, depth progressive from ·015 to ·004.	Case choked into rear cannelure, a plain wax wad with a little French chalk in it, between powder and bullet.	4″	Grains 715	Compressed cylindro-conoidal, 12 parts lead, one part tin, eight cannelures filled with wax, cavity in base with clay plug. Weight 480 grains.	1″·425	·449
Richards	·45	One in 21″ uniform.	Polygonal, eight cuts.	Bullet not secured in case, plain wax wad between powder and bullet.	3″·65	Grains 730	Compressed solid bullet, 95 parts lead, five parts tin, tapering from base and head; conoidal paper wapper, dipped in wax at base and half wax, half W. R. No. 8 superadded. Weight 485 grains.	1″·256	·44 to ·45

* Excepting in ·5 inch Enfield.

Rifle.	Bore.	Twist.	Number and Description of Grooves.	Description of Cartridge.	Length.	Weight.	Description of Bullet.	Length.	Diameter.
Lancaster	inch. Major axis ·466, minor ·451; Major axis ·460, minor ·450	One in 36″ at breech, one in 20″ at muzzle.	oval.	Bullet not secured in case, plain wax wad between powder and bullet; both bullets were tried with plain wax, and both with wax between millboard wads.	3″·82	Grains 720	Compressed, solid bullet, 100 parts lead, five tin, five antimony; two submitted. No. 1 six round cannelures. Weight 480 grains. No. 2, four round cannelures, slight cavity at base. Weight 477 grains, both paper wrappers, no lubrication, shape of both cylindrical with ogival head.	No. 1 1″·315 No. 2 1″·276	·45 ·45
		Do.	semi-oval.						
Whitworth	·45	One in 20″ uniform.	Hexagonal	Bullets not secured in case, wad of lubrication between powder and bullet of wax and small portion of Price's mixture.	3″·86	Grains 722	Compressed, pure lead, cavity at base and in point, wood plug in point; cylindro-conoidal; dry paper wrapper. Weight 480 grains.	1″·42	·443
Rigby -	·451	One in 20″ uniform.	Eight grooves of equal depth from breech to muzzle so formed as to leave eight narrow lands or ridges with rounded edges; greatest depth of grooves ·005″.	Bullet wrapped in two folds of thin paper.	Not ascertained		Bullet cylindro-conoidal, flat base, hardened lead. Weight 480 grains.	1″·25	At base ·448 at ·75″ from base ·440.

SUMMARY OF THE RESULTS OF THE SHOOTING.

Accuracy at 300 Yards.

System.	Mean deviations, being averages of five targets of 20 shots each from each barrel. Two barrels cleaned out between the targets and two left uncleaned.				Mean Elevation.
	Cleaned.	Uncleaned.	Cleaned.	Uncleaned.	
	feet.	feet.	feet.	feet.	° ′ ″
Enfield -	·62	·51	·61	·64	0 35 42
Henry -	·62	·47	·68	·63	0 38 3
Lancaster*	—	—	—	—	—
Rigby* -	—	—	—	—	—
Westley Richards*	—	—	—	—	—
Whitworth	·54	·64	·63	·62	0 40 10
Snider, ·5 inch† -	·59	·59	—	—	0 30 28

* These rifles were first fired for the sake of convenience at the 500 yards range, and as the results were not sufficiently good they were not fired at this distance.

† Only two barrels were submitted, and it was thought better not to fire a larger number of rounds from these barrels than from those of the other systems. *Vide* note at 500 yards.

Accuracy at 500 Yards.

System.	Mean deviations, being averages of five targets of 20 shots each from each barrel. Two barrels cleaned out between the targets and two left uncleaned.				Mean Elevation.
	Cleaned.	Uncleaned.	Cleaned.	Uncleaned.	
	feet.	feet.	feet.	feet.	° ′ ″
Enfield -	1·27	1·20	1·03	1·11	1 8 25
Henry -	1·06	1·07	0·90	1·06	1 8 42
Lancaster* (Semi-oval barrel, No. 1 bullet, and with wad of wax only.)	1·08 average of 4 targets.	—	—	—	1 19 20
Rigby† -	2·34 average of 4 targets.	—	—	—	1 17 0
Westley Richards‡ -	1·39	1·30	—	—	1 17 41
	Same barrel.				
Whitworth -	1·07	1·51	1·09	1·30	1 12 3
Snider, ·5-inch§ -	1·02	1·13	1·16	1·11	1 5 17

* As before mentioned, Mr. Lancaster submitted two descriptions of barrel and four of ammunition. The results of only one are given in the table; those from the other combinations not being sufficiently satisfactory to warrant a continuation of the trial.

† It was not considered desirable to continue this trial, as the results were not satisfactory.

‡ Only one barrel submitted, which was fired twice.

§ As only two barrels were submitted, they were fired at this range twice over.

ACCURACY AT 800 YARDS.

System.	Mean deviations, being averages of five targets of 20 shots each from each barrel. Two barrels cleaned out between the targets and two left uncleaned.				Mean Elevation.
	Cleaned.	Uncleaned.	Cleaned.	Uncleaned.	
	feet.	feet.	feet.	feet,	° ′ ″
Enfield	2·47	2·08*	2·94	2·42	2 2 28
Henry	2·39	1·85	2·30	2·35	2 3 57
Lancaster†	—	2·14	—	—	2 15 57
Rigby‡	—	—	—	—	—
Westley Richards§	—	—	—	—	—
Whitworth	2·91	3·11	4·48	2·94	2 4 36
Snider, ·5-inch‖	3·01	2·46	—	—	2 13 40

* Mean of four targets, as the rest was unsteady during the fifth target.
† *Vide* remark at 500 yards to explain only one barrel being taken on.
‡ The remark at 500 yards range.
§ The shooting of this arm was not considered sufficiently good at 500 yards to warrant its being carried on to the other ranges, especially as Mr. Westley Richards, who was present, expressed his dissatisfaction at the result of the shooting.
‖ *Vide* remark at 300 yards to account for only two barrels having been fired.

ACCURACY AT 1,000 YARDS.

System.	Mean deviations, being averages of 5 targets of 20 shots each from each barrel. Two barrels cleaned out between the targets and two left uncleaned.				Mean Elevation.
	Cleaned.	Uncleaned.	Cleaned.	Uncleaned.	
	feet.	feet.	feet.	feet.	° ′ ″
Enfield	3·93	3·55	4·74	4·15	2 46 21
Henry*	2·65	3·33	2·59	3·12	2 47 4
Lancaster	—	4·65	—	—	3 5 0
Rigby†	—	—	—	—	—
Westley Richards‡	—	—	—	—	—
Whitworth‡	—	—	—	—	—
Snider, ·5-inch§	3·96	4·90	—	—	3 23 19

* Men were working behind the butt during the firing of the Henry rifle, and consequently it was necessary to make the point of impact lower than usual, in order to prevent the chance of a shot going over the target. Thus misses (short) occurred in shots which would otherwise have struck the target, and the average was consequently slightly deteriorated.
† *Vide* remark at 500 yards.
‡ Not sufficiently good at other ranges to warrant its being carried forward to this range.
§ *Vide* remark at 300 yards.

Mr. Westley Richards' arms.

In addition to the barrels submitted in answer to the circular letter of the 9th March 1868, two rifles with drawn brass cartridges were received and tried at the especial request of Mr. Westley Richards. The shooting of these rifles is given in detail in Appendix V., page 75, and it is sufficient to state that the systems did not appear to have been thoroughly worked out when brought before the notice of the Committee, and that the results in respect to accuracy were not nearly equal to those obtained from other barrels.

His cartridge.

At the same time the system of cartridge case submitted by Mr. Westley Richards, but which was first brought before the notice of the Committee by General Berdan's agent, appears to possess merit and may deserve consideration at a future day, if its further development should give satisfactory results. At present, in the form presented to the Committee, it is not equal to the Boxer cartridge case.

Comparison of the shooting.

Accuracy.

Trajectory.

From a comparison of the shooting at the several distances it will be seen that the Henry barrels were superior to the others in accuracy at all the distances, excepting 300 yards, at which distance the shooting of all the rifles was nearly equal, the Enfield showing an almost imperceptible superiority. In flatness of trajectory, judging from the angle taken by the clinometer, the Henry rifle was also practically equal to any of the other rifles of ·45 inch calibre, whilst, it was only slightly excelled in this particular at the shorter ranges by the ·5-inch bore.

But as during the long course of experiments it was discovered that it was difficult, if not impossible, to ascertain the true trajectory by firing from the fixed rests and laying the rifles by means of a clinometer, owing to the angle of departure of the bullet being so greatly dependent on the fittings of the rest, it was determined to carry out the experiments described in page 19 as the best means of obtaining the trajectories of rifles fired from the shoulder.

By reference to these experiments it will be seen that even at the shorter ranges the Henry ·45-inch had a flatter trajectory than the ·5 inch, and the truth of this conclusion was verified by the experiments made by Captain Noble, R.A. (given in page 20), which show a higher initial velocity in the ·45-inch than in the 0·5 inch Snider.

Fouling.

The defect of fouling supposed to attach to ·45 bore rifles was not observable in the Henry arm. The firing of 100 rounds without cleaning out produced no deterioration in the shooting, and when additional experiments were made, by firing intermediate targets of 20 shots with great rapidity, the accuracy of the shooting improved rather than deteriorated, *vide* Appendix V., page 75.

The Henry arm the best of the ·45 bores.

In every respect the Henry rifle may be taken as the most favourable type of arm of a ·45-inch calibre.

Remarks on the trials.

Before proceeding further it is due to the other gentlemen who submitted arms to remark that, either previous or subsequent to sending in their barrels, many of them expressed an opinion that the time allowed was insufficient to enable them thoroughly to work out the difficult question submitted to them, viz., that of procuring good shooting from systems adapted to breech loaders, which had shown excellent qualities when applied to muzzle loaders, and that Mr. Westley Richards, in his answer to the circular letter of the 9th March 1868, did not anticipate that good shooting could be obtained under the conditions therein laid down. At Messrs. Lancaster and Rigby's request letters giving their opinion on this matter are annexed (*vide* Appendices VI. and VII., page 76.)

On the other hand it should be remembered that all these gentlemen had equal opportunities with Mr. Henry for investigating and working out the subject, and that his success is due, not to any sudden discovery, but to the attention he has long given to the production of breech-loading rifles adapted for metallic cartridges.

During the first competition *vide* Report No. 4,905, 12th February 1868, the Henry rifle had shown many excellent qualities, marred only by occasional strip shots, which were probably the results of fouling. These defects Mr. Henry has now completely remedied by improvements in his ammunition. He has substituted pure beeswax for a combination of beeswax and tallow, and a bullet hardened with tin for one of pure lead. The rifles from which this ammunition was fired were similar in system to those sent in during the first competition, excepting that they had nine in place of seven grooves, but Mr. Henry considered that the shooting was little if at all affected by this change, and his assertion was borne out by the good results obtained from the seven-grooved rifles with the improved ammunition.

Remarks on the ammunition fired from the Henry arm.

It remains now to point out clearly in what degree Mr. Henry is entitled to credit for the production of this ammunition and what are its peculiar advantages.

The cartridge case.

The cartridge case, manufactured at the Royal Laboratory and furnished to Mr. Henry in common with the other gentlemen who submitted arms, is similar to that in use in the service and known as the Boxer case. During the long trials of this case, when used with heavy powder charges, its good qualities became plainly apparent, and it proved itself equally suitableto a ·45-inch bore as to a ·577-inch bore. There were very few missfires, and the cartridge cases seldom if ever cut unless placed in rifles the chambering of which was unsuitable. The strength of its construction prevented any defect from its necessarily increased length.

The lubrication.

The lubrication in respect to composition was obligatory, pure beeswax being insisted upon as best adapted for military ammunition, *vide* Mr. Abel's evidence, Appendix I., page 64. The method of applying it in the form of a wad between jute card wads in rear of the bullet is due to Mr. Henry, as is also the shape and composition of the bullet.

The bullet.

It is possible that some, if not all, of these appliances and methods may have been separately employed by others before Mr. Henry, but the Committee cannot forbear remarking that the successful combination is undoubtedly due to him, and that had he not brought it to their notice they would probably at the present time have been unable to recommend the adoption of a ·45-inch bore, the advantages of which are so prominently shown by the numerous experiments here recorded.

The ammunition, when received.

The improved ammunition was submitted to the Committee as early as March 1868, with a request from Mr. Henry that its component parts should be kept secret, excepting from the Royal Laboratory, where the ammunition with which the experiments were conducted was generally made.

Advantages of the Henry ammunition.

The advantages pertaining to this ammunition were four, viz., accuracy, non-fouling, simplicity in form of bullet, and great penetrating power of the bullet.

The first, accuracy, is in part dependent upon the second, and partly upon the form of bullet and system of rifling.

The non-fouling appears to be principally due to the method of applying the lubrication and to the employment of a paper wrapper round the bullet, but the use of a

particular powder, Curtis and Harvey, No. 6, also contributes to this important qualification.

The simplicity of the form of the bullet facilitates its manufacture, and the absence of cavities contributes to its penetrating power, but this latter is also due to the hardness of the bullet and its small diameter as compared with the Snider Enfield bullets of 0·5-inch and 0·577-inch diameter.

The power of penetration.

The penetrating power of the Henry bullet from the ·45-inch bore became so obvious from preliminary trials, that it was decided to make experiments on various substances, in comparison with the bullets from the ·5 and ·577-inch bores.

These were accordingly made and a summary of the results is given, with a more detailed account, in the Appendix VIII., page 77.

PENETRATION TRIALS OF THE HENRY ·45-INCH, THE ·5-INCH, AND ·577-INCH BORES.

When fired through ½-inch elm planks, placed 1 inch apart :—

The Henry ·45-inch hardened bullets made an average penetration of 14½ elm planks.
The ·5-inch Snider hollow lead bullet, 8½ do.
The ·577 do. hollow lead and wood bullet, 8½ do.

Through balks of timber.

When fired through 3-inch balks of dry fir timber, placed close together, at 50 yards distance, the ·5 and ·577-inch Snider bullets were stopped by the second balk The Henry ·45-inch bullet penetrated three balks easily.

At 100 yards distance the Henry bullet also penetrated three balks easily, and a fourth balk of green fir having been added, making in all 12 inches of wood, two out of three bullets penetrated. Thus, whilst two balks of timber at 50 yards distance were proof against bullets from the ·5-inch and ·577-inch bores, four balks of timber at 100 yards distance were not proof against the Henry bullet from the ·45-inch bore.

Through iron plates.

When fired against an iron plate ·261 inch in thickness :—

The ·577-inch penetrated at 75 yards distance, but did not penetrate at 100 yards distance.
The ·5-inch penetrated at 100 yards distance, but not at 150 yards.
The Henry ·45-inch penetrated at 200 yards, but not at 300 yards.

When fired at iron plates ·125-inch thick, placed 1½ inch apart :—

The ·577 and ·5-inch failed to penetrate at 300 yards.
The Henry ·45-inch penetrated at 500 yards.

Through a rope mantlet.

When fired at a rope mantlet (four thicknesses of 3-inch rope) :—

The ·577-inch failed to penetrate at 50 yards distance.
The ·5-inch penetrated at 50 yards but failed to do so at 100 yards.
The Henry ·45-inch penetrated at 350 yards, but failed to do so at 400 yards.

It may be remarked that in two instances pieces of the ·5-inch bullet penetrated at 200 and at 250 yards distance.

Through a gabion.

When fired at an ordinary gabion filled with earth from a clay soil :—

The ·577 and ·5 inch failed to penetrate.
The Henry ·45-inch penetrated at 10 and 25 yards, but failed at the longer distances.
The Jones' (iron band) gabion was proof against all.

Through a sap roller.

When fired at a sap roller :—

The ·577 and ·5 inch failed to penetrate.
The Henry ·45-inch penetrated at 10 yards and at 25 yards, but failed at the longer distances.

Through sandbags.

When fired at a sand bag containing one bushel of sand :—

The ·577 and ·5 inch failed to penetrate.
The Henry ·45-inch penetrated at 10 yards and at 100 yards.

Nature of wounds inflicted.

Experiments were also made to discover the nature of wounds inflicted on an animal. A horse was killed, and immediately afterwards bullets from the ·45, ·5, and ·577-inch bores were fired into his carcass.

The details are given in Appendix VIII., page 77, together with a report from Veterinary Surgeon Harrison, R.H.A., Appendix IX., page 78, who was present during the experiments. It was remarked that the bullets from the Henry ·45-inch bore produced the most severe fractures, the bullets from the ·5 and ·577-inch being more disposed to flatten and to traverse the soft tissues adjoining the bones.

The Henry ·45-inch bullet penetrated in one instance the body of the horse, making a large wound on exit.

The conclusion arrived at from this experiment was, that the ·45-inch bore hardened bullets produced even more severe wounds than the 5· or ·577-inch bullets.

Comparison between Henry ·45, ·5 inch and ·577 Snider-Enfields.

Having now shown the results of the experiments in respect to accuracy, trajectory, and penetration, and having already determined that the Henry barrel with the ammunition submitted with it was the most perfect type of the ·45-inch bore brought under the notice of the Committee, it remains to point out the advantages of this arm as compared with those of the Snider-Enfield of the ·5 and ·577-inch bores.

Facts to be borne in mind during the comparison.

When instituting this comparison, it should be borne in mind that the ammunition and barrel must not be separated.

From the experiments made and the experience gained up to the present time it may be assumed that with the object of attaining good results in shooting, the ammunition submitted with the Henry ·45-inch and Snider-Enfields ·5 and ·577-inch was of the description most suitable for these systems, and must be taken with its advantages and defects.

Instances given.

For instance, to obtain the necessary charges of powder and lead, a long cartridge case is (at the present time) necessary for a ·45-inch bore. Whilst, to obtain accuracy without undue weight, the hollow bullets are preferable to the solid for the ·577 and ·5 inch bores.

Summary of advantages and disadvantages of the three bores.

Having drawn attention to these points, a summary of the advantages and disadvantages of the three systems, *i.e.*, the Henry ·45-inch and the Snider-Enfields ·5 and ·577-inch, is given.

Accuracy.

1. In respect to accuracy, the Henry ·45-inch showed a marked superiority over the 0·5-inch when fired simultaneously with it, and from experiments made at different times by the Committee and from evidence received, it showed a still more marked superiority over the ·577-inch bore, especially at the longer ranges.

Trajectory.

2. To ascertain the trajectories, when fired from the shoulder, of the Henry ·45-inch bore, the Snider ·5-inch, and the Snider ·577-inch, two groups of five shots each were made by two careful shots from each rifle at 500, 400, 300, 200, and 100 yards ranges with the 500-yards sight (the elevation for that range having been carefully ascertained). Aim was taken always at the same point on the target, and the means of the heights of the points of mean impact of these groups at each range above those of the groups at 500 yards gave the heights of the ordinates at each distance; these are plotted out, and the curve connecting them is considered the true trajectory of each rifle.

A diagram showing the trajectories of the three rifles is given, *vide* Plate IV. The advantages of the Henry ·45-inch bore will be seen from the following table.

	Safe distance for Cavalry.	Safe distance for Infantry.	Greatest height of trajectory.
			Feet.
Snider ·577-inch - -	Between 138 and 400 yards -	Between 92 and 438 yards -	11·9
Enfield ·5 „ - -	Between 221 and 325 yards -	Between 123 and 406 yards -	8·9
Henry ·45 „ - -	Nil - - - -	Between 139 and 396 yards -	8·1

Allowance for wind.

3. In respect to allowance for wind the advantage lay greatly with the ·45-inch bore. It has been already reported, *vide* Report, No. 4905, 12th February 1868, that during a high wind across the 1,000 yards range it was observed that "while the Snider rifles (·577-" inch bores) struck 40 to 50 feet, the Henry rifles struck from 20 to 25 feet to the right " of the point aimed at." During the more recent trials the Henry ·45-inch was fired simultaneously with the ·5-inch, with results as shown in the following table:—

Comparison between Henry ·45-inch and Snider-Enfield ·5-inch.

Description of Arm.	Range.	Wind.	Allowance for wind.	Difference in favour of the ·45-in.
	Yards.		Feet.	Feet.
Henry ·45 inch - -	500	Fresh across range.	1·39	5·61
Snider ·5 „ - -	500		7· 0	
Henry ·45 „ - -	800	Fresh, but not much across the range.	0·93	6·71
Snider ·5 „ - -	800		7·64	
Henry ·45 „ - -	1,000	Fresh across range.	13·97	14·57
Snider ·5 „ - -	1,000		28·53	

The advantage thus shown as belonging to the Henry ·45-inch although principally due to the shape of the bullet in relation to its weight, which enables it to retain its velocity in a higher degree than the bullets of the Snider ·5 and ·577-inch, is also partially to be accounted for by the greater initial velocity of the bullet from the ·45-inch bore Henry, as is shown by the following table:—

Nature of Arm.	No. of rounds.	Charge and nature of powder.	Projectile, nature and mean weight.	Mean observed velocity of five shots, at 82 feet.	Calculated mean initial velocity.
				Feet.	Feet.
Henry ·45-inch - -	5	85 grains Curtis & Harvey's No. 6.	Henry bullet, 480 grains.	1316·6	1362·7
Snider ·5-inch - -	5	80 Curtis & Harvey's No. 6.	Boxer bullet, 440 grains.	1283·9	1342·7
Service Snider ·577-inch -	5	70 Rifle F.G. -	Do., 480 grains -	1191·9	1252·8

Fouling. 4. In respect to fouling. There was little or no fouling observed in either the ·45-inch, ·5-inch, or ·577-inch bores after firing (on different days and with different degrees of temperature) upwards of 100 rounds each without cleaning out the rifles.

Penetration. 5. In respect to penetration. The results of the trials (already given) showed a marked superiority of the ·45-inch bore over the ·5-inch, and a superiority, although not so marked, of the ·5-inch over the ·577-inch, whilst the experiments in respect to wounds inflicted made it apparent that the ·45-inch bore was even more deadly and produced more serious injuries than the ·5 and ·577-inch bores.

Form of cartridge. 6. In respect to form of cartridge the advantage lay with the larger bores; their respective lengths being

·45-inch bore - - - -	3″·75
·5 „ „ - - - -	3″·29
·577 „ „ - - - -	2″·45

In strength, estimated not by the results of firing but by rough usage, the longer cartridge appears slightly inferior to those of the ·5-inch, and that again inferior to the ·577-inch, but all these cartridges are sufficiently strong for the requirements of the service.

Measurement and weight of ammunition. 7. In respect to cubic measurements and weight of ammunition packed for service, the following table will show how nearly equal the three descriptions of ammunition are:

CUBIC MEASUREMENTS and WEIGHT of one packet containing 10 rounds of ammunition, packed as for service.

	Measurement. Cubic Inches.	Weight. lbs. ozs. drs.
·45-inch bore - -	11·481 - -	- 1 0 8
·5 „ „ - -	11·725 - -	- 15 7
·577 „ „ - -	11·583 - -	- 1 0 13

Compressed powder suitable for ·5-inch. It is, however, fair to state that the experiments made with compressed powder charges (*vide* p. xxx. Compressed Powder Report) showed that the ·5-inch bore was adapted to this description of powder, and that therefore, if compressed powder were used, the respective lengths and cubic measurements of the cartridges of the ·5-inch bore could be reduced.

Superiority of the ·45 bore Henry. Having carefully considered the advantages and disadvantages of the ·45, ·5, and ·577-inch bores, the Committee decided that the Henry ·45-inch bore was best adapted to the requirements of the service. Its superiority in point of

Accuracy,
Trajectory,
Allowance for wind, and
Penetration

appeared to them to counterbalance the other conditions in which it was, in some degree, excelled by the ·5 and ·577-inch bores, especially as they believed that, with care and attention, some means might be discovered of remedying the slight disadvantage pertaining to the ·45-inch bore, viz., the length of cartridge.

Incidental experiments. Connected with the trials to determine the best shooting barrel there were many incidental experiments, which although necessitating considerable time to carry out may be briefly alluded to.

Method of fastening the bullets into cases. The method of fastening the Henry bullets into the cartridges required consideration. When submitted first by Mr. Henry they were fastened into their cases sufficiently tight

for all ordinary purposes, but, inasmuch as when ammunition is carried loose in the soldier's pouch there is great wear and tear, and a tendency in the bullets to shake out of the cartridge cases, it was thought better that they should be secured in their cases somewhat more firmly. This was first done by Mr. Henry by means of a slight cannelure in the bullet formed by choking it into the case after the cartridge had been made up, but subsequently Colonel Boxer, R.A., Superintendent Royal Laboratories, made some bullets of the Henry pattern with one cannelure cut in the ordinary manner.

Experiments were made to ascertain whether the accuracy of the shooting had been affected, and it was found that such had not been the case, but that the rifle showed equal accuracy with bullets either with or without a cannelure.

Cast and compressed bullets.

The question of cast and compressed bullets also occupied the attention of the Committee and necessitated experiments. Cast bullets had been originally submitted by Mr. Henry and good results had been obtained, but as compression is considered at the Royal Laboratory to be a better method for manufacturing bullets in large quantities than casting, experiments were made to discover whether any change would thereby be effected in the accuracy of the shooting. Cast and compressed bullets were therefore fired simultaneously from Henry barrels, and the results, as regarded accuracy and non-fouling, were equally good.

Powder Curtis and Harvey and F.G.R.

The description of powder likewise required consideration. All the gentlemen who submitted ·45-inch bore rifles employed the Curtis and Harvey's powder No. 6 (of which the superiority for small-bore rifles is attested in the report of the Ordnance Select Committee, of which Brigadier-General St. George was then President, *vide* Appendix II. page 68).

On inquiry of Colonel Younghusband, R.A., Superintendent of the Royal Gunpowder Manufactory at Waltham Abbey, it was found that this description of powder was more expensive to manufacture than the present service powder. Experiments were therefore carried out to ascertain whether the present service powder was equally suitable to the Henry ·45-inch bore.

Many targets were made, and the results obtained proved that, although the present service powder produced fair shooting and evinced but little tendency to foul, yet the Curtis and Harvey's No. 6 showed better results in both these particulars.

It was also remarked that the cartridges made up with the service powder were slightly longer than those made up with the Curtis and Harvey's No. 6.

Letter to Col. Younghusband on Curtis and Harvey's powder.

These advantages in the Curtis and Harvey's No. 6 powder were communicated to Colonel Younghusband, who, in a letter (Appendix X., page 78), recommended that further and more extended trials should be made with powder of a description similar to Curtis and Harvey's No. 6, but manufactured at the Royal Gunpowder Manufactory. These trials have not yet been completed owing to want of time.

Experiments with short barrel.

Experiments were made to ascertain whether a diminution in the length of barrel would affect its shooting. The length of barrel fixed in the circular letter of the 9th March 1868 had reference to the total length of arm, which the War Office advertisement 22/10/66 laid down as obligatory for a military weapon, and was based upon the length of the Henry barrel submitted for the first competition. Thus the total length of the arm with short stock was 51 inches, and the total length of barrel 35 inches. As, however, the arms served out to serjeants are shorter than those of the rank and file, trials of shooting were made from a barrel shortened to 31 inches, and the results in respect to accuracy and non-fouling were as good as those from the longer barrel.

Experiments with enlarged chamber.

A communication was received from Colonel Boxer, R.A., Superintendent Royal Laboratories, to the effect that, "taking into account the necessary limit of manufacture "both in the gun (Henry ·45-inch) and ammunition, it will be necessary to increase the "diameter of the top of the chamber of the ·45-inch bore rifle by seven thousandths of an "inch, in order to admit of easy loading under all circumstances when the Henry bullet "is used."

In consequence of this communication the chambers of several of the Henry barrels were enlarged, and comparative experiments for accuracy of shooting were made between them and the barrels whose chambers remained unaltered. The results of many trials showed that the accuracy of shooting had not deteriorated from the enlargement of the chamber.

The Henry barrel suitable for the requirements of the service.

In every respect as regards shooting the Henry barrel had proved itself suitable to the requirements of the service. There remained only the questions of durability and expense of manufacture. The former, viz., the durability of the rifling may possibly be affected by long continued shooting, but is more liable to show deterioration by incessant and careless cleaning and polishing.

Its durability.

From the results of the experiments, which involved the firing of upwards of 2,080 rounds from the same barrel, and from evidence received that as many as 30,000 rounds

had been fired from a barrel which showed no indications of wear, it was clear that the Henry system of rifling was sufficiently strong to resist any effects from mere shooting.

In regard to cleaning it is evident that a long course of scrubbing and polishing must wear out any barrel, especially if steel ramrods without any protection be employed, but after an examination of the Henry rifling in comparison with the others submitted for trial, and after a careful consideration of the statements made by Mr. Henry, the Committee are of opinion that the Henry rifling is better calculated to resist wear and tear than the Enfield, which in a ·45-inch bore gave the second best results in respect to accuracy.

The method of cleaning the barrel.

It may be a question whether some better method of cleaning barrels than that at present in use may not be invented, as it must be a matter of regret if a really good and accurately shooting arm should be injured by excessive cleaning, as was the case with the muzzle-loading Enfield.

Its cost.

With reference to the cost of rifling barrels on the Henry system, the Committee received much conflicting evidence. Estimates (*vide* Appendices XIII. and XIV., pages 79 and 80) were submitted by Colonel Dixon, R.A., and Mr. Henry, and from this and other evidence they have received, the Committee are of opinion that the Henry system of rifling will not be found to be more expensive in manufacture than many others. The Henry rifles may be made (as before mentioned) with either seven or nine grooves, and owing to there being two cuts less in the former than in the latter the cost of manufacture may be somewhat less. As, however, the cuts in the seven-grooved are deeper than those in the nine-grooved rifles, the diminution of cost will not be considerable.

Opinion on the Henry barrel.

In regard to both durability and cost of manufacture the Committee are of opinion that the Henry barrels are adapted for military purposes, and having already reported that in other respects they appeared superior to the several systems of rifling brought before their notice, the Committee are of opinion that the Henry barrel, ·45-inch bore, is that most suitable in all respects for the requirements of the service.

CONCLUSION.

Steps taken to combine the Martini breech mechanism and Henry barrel.

The Committee having made separate experiments to determine the breech mechanism and barrel best suited to the requirements of the service, and having decided that the Martini breech mechanism and the Henry barrel with the ammunition submitted by Mr. Henry fulfilled most satisfactorily the necessary conditions, requested Colonel Dixon, R.A., Superintendent Royal Small Arms Factories, Enfield, to construct four arms, of which the breech mechanisms were to be made under the supervision of Mr. Martini, and the barrels under that of Mr. Henry. The breech mechanisms and barrels were consequently manufactured at Enfield, excepting the rifling of the latter, which was done by Mr. Henry.

The barrel whether to be nine or seven grooved.

With regard to the barrel, the Committee had made their more recent trials with Mr. Henry's nine-grooved rifle, but as Mr. Henry informed them that the shooting of his seven-grooved was equal to that of his nine-grooved barrels, that in power of endurance they were possibly superior, and that the cost of their manufacture would be probably less, it was decided that two out of the four barrels should be rifled with seven grooves, and two with nine grooves. A request was at the same time sent to Colonel Dixon, that

Sights of the new rifles.

he would fix on the new rifles sights similar to those known as the "Whitworth" sights. On a barrel of 35 inches in length, the back sight ought to be 7 inches from the breech-end of barrel, and 2 feet 2·5 inches from fore sight; the open space in the flat of this description of back sight is considerably wider, and the V shallower than in the present sight of the long Snider rifle: the Committee are of opinion that this alteration will enable the firer to take quicker and more accurate aim, especially in bad light, than with the present service sight.

The arms received.

Two of these arms were received by the Committee about the beginning of January 1869, and the two others at a somewhat later date. In breech mechanism they were similar in pattern to the last Martini arm with which experiments had been made, excepting that arm No. 2 was fitted with a slightly different safety-bolt, and No. 4 with an improved indicator. The barrels were of the Henry pattern.

Mr. Martini and Mr. Henry inspect the arms.

Mr. Martini inspected and expressed himself satisfied with the breech mechanisms, and Mr. Henry inspected the barrels, and having rectified a slight error in their chambering, expressed himself satisfied.

The arms tried for accuracy.

The arms were fitted into fixed rests, and comparative experiments for accuracy were made between the seven and the nine grooved barrels at the several ranges, viz., 300, 500, 800, 1,000, and 1,200 yards.* Their trajectories up to 500 yards were also tested, by

* The Committee were partly induced to make trials of the arms at 1,200 yards from information they received that field artillery could open upon infantry with shrapnel at this range, and they were desirous (per contra) of ascertaining what effect rifles would probably have on artillery.

firing them in the manner described at page 19, and it was found that the trajectory of the seven-grooved was slightly lower than that of the nine-grooved rifles.

A summary of the results of the shooting is given, and the details will be found in Appendix XV., page 81.

SUMMARY of the Results of Shooting of the Henry Barrels.

Henry barrel.	Mean deviations, being averages of five Targets of 20 shots each from each Barrel.		Corrected Angle.	The best of the five Targets of each Rifle at each Range.	
	Cleaned.	Not cleaned.		7 grooves.	9 grooves.
	300 yards.				
	Feet.	Feet.	° ′ ″	Feet.	Feet.
7 grooves.	—	·57	0 38 34	·47	·49
9 „	·56	—	0 46 3		
	500 yards.				
7 „	·95	—	1 1 26	·79	·56
9 „	—	1·08	1 17 20		
	800 yards.				
7 „	—	1·63	2 2 29	1·29	1·13
9 „	1·47	—	2 8 34		
	1,000 yards.				
7 „	2·80	—	2 38 26	2·19	2·47
9 „	—	3·35	2 44 38		
	1,200 yards.				
7 „	3·46	—	3 55 34	2·28	3·94
9 „	—	5·10	3 31 37		

Experiments made with the 380-grain bullet.

Experiments were also made with a lighter bullet of 380 grains, with the object of ascertaining whether the trajectory at the shorter ranges might not be lowered, and the ammunition lightened, without occasioning deterioration in accuracy of shooting. From these experiments it became apparent—

1st. That the accuracy of the 380-grain bullet was not equal to that of the 480-grain bullet, even at the comparatively short ranges of 300 and 400 yards, whilst at the longer ranges, the difference in favor of the 480-grain bullet was of course much more clearly marked.

2nd. That the highest point of the trajectory at 300 yards, of the 380-grain bullet, was only seven inches lower than that of the 480-grain bullet, viz. 2 feet (380-grain) against 2 feet 7 inches (480-grain), and at 500 yards was about one foot lower, viz. $7\frac{1}{2}$ feet (380-grain) against $8\frac{1}{4}$ feet (480-grain). In power of penetration the advantage lay with the 480-grain bullet, which penetrated 23 half-inch elm planks, whilst the 380-grain bullet penetrated 17·3 similar planks.

Advantages and disadvantages of a 380-grain bullet.

Thus, the advantages in favor of the 380-grain bullet were a slightly flatter trajectory at the shorter ranges, and a diminution of exactly one pound in the weight of 70 rounds of ammunition.

Against these advantages were to be placed—

1st. The greater accuracy of the 480-grain bullet;

2nd. Its greater penetrative power.

And if two weights of bullets were used, one for short and the other for long ranges, there would be the disadvantages attending the employment of two descriptions of ammunition, and a double sighting on the rifles.

The Committee recommend the 480-grain bullet and the seven-grooved rifle.

The Committee, after considering the results of the experiments, recommend the 480-grain bullet as best adapted for the requirements of the service. They also recommend the seven-grooved barrel in preference to the nine-grooved. In accuracy the two barrels appear about equal. In flatness of trajectory the advantage lies slightly with the seven-grooved barrel, owing probably to the diminution of friction consequent on the bullet bearing on 14 in place of 18 points.

In durability and cheapness of manufacture the advantage appears to lie with the seven-grooved rifles.

Proof of durability of rifling.

With regard to the rifling, a proof was afforded that continued firing had no appreciable effect on its durability. The seven-grooved rifle (Martini's breech mechanism and Henry barrel), which had already been fired for accuracy, was again tested after the firing of upwards 3,000 rounds, and no deterioration was observed.

The breech mechanism.

The system of breech mechanism had been so frequently tested (as has been already detailed in the former portion of the Report) that the Committee were satisfied with firing several hundred rounds to try its general serviceability and power of endurance. Upwards of 3,000 rounds were fired from No. 1 arm (Martini breech mechanism, Henry barrel), and the breech mechanism worked as well at the end of the firing as it did at the commencement. After firing 2,100 rounds the several parts were tested by gauges, and were not found to have given way or to show any symptoms of wear. The breech mechanism was submitted to the examination of practical mechanics, who expressed their opinion that the construction and fitting of the several parts were mechanically correct.

Inspected by practical mechanics.

A drawing of a section of the breech mechanism is given in Plate VI.

Fouling observed to enter breech mechanism but no injury accrues.

During the trials it was observed that fouling was liable to force itself into the breech action, if the cap of the cartridge should give way or the cartridge burst. But the working of the breech action was in no way impeded by the fouling. It appeared also from the trials, and from evidence received from Mr. Abel, Chemist to the War Department (*vide* Appendix XVI., page 81), that the fouling from gunpowder is a protection against rust, and therefore exerts no injurious effects on the mechanism.

The bolt.

It will be noticed that there is no half-cock position in the Martini system, but to allow the arm to be carried with safety when loaded and ready to be fired, a locking bolt, which prevents the trigger from being pulled, has been added to Mr. Martini's original pattern. This plan the Committee consider preferable both in regard to safety and certainty of working to the half-cock in those systems employing a side lock.

The indicator.

The only weak point that became apparent was the indicator, the spring of which broke. In place of this Mr. Martini has substituted in arm No. 4 a new indicator forming part of the tumbler pin, which cannot get out of order, and is equally efficient for showing when the main spring is compressed. By this arrangement there is a saving of three pieces in the mechanism (*vide* Plate V.)

Opinion on the breech mechanism.

From the results of the many experiments they have made, and from the evidence they have received, the Committee are confirmed in their opinion that the Martini system is the best adapted for military purposes of any that have been brought before them. It is safe, strong, simple of construction and of manipulation, and capable of great rapidity of firing, as is evidenced by the fact that 20 rounds were fired from it by Captain Mackinnon in 48 seconds. The Committee, having by these trials satisfied themselves that the combination of the Martini breech mechanism, with the Henry barrel, had not caused any deterioration in respect to efficiency of either breech or barrel, and having already reported that the Martini breech mechanism and the Henry barrel were each separately the best of the several systems which had been brought under their notice, are of opinion that the arm combining these two systems is that best adapted for the requirements of the service. The arm appears to the Committee to surpass in nearly every particular the standard fixed by the War Office advertisement, 22.10.66., and to be a weapon thoroughly suitable for all military purposes. In accuracy of shooting, flatness of trajectory, power of penetration, strength of barrel, safety, simplicity, and rapidity of manipulation, it excels the present service arm. The recoil appears about the same as that of the muzzle-loading Enfield. The cost of manufacture, as taken from the estimate received from Colonel Dixon, R.A., Superintendent Royal Small Arms Factories, shews that the arm can be made with steel barrel and bayonet for 2*l.* 18*s.* 9*d.**

Opinion on the whole arm.

The ammunition.

The ammunition which combines the case similar to that in use in the service, and known as the "Boxer" case, and Mr. Henry's combination of lubricating wad and bullet, the last of a peculiar form and hardened with tin, appears in all respects suitable for military purposes. With regard to the cost of this ammunition, an estimate from Colonel Boxer, R.A., Superintendent Royal Laboratory, is given (*vide* Appendix XVII., page 82).

By this estimate it appears that the ammunition used for the ·45 inch bore costs at present 4*l.* 7*s.* 5*d.*, whilst that for the ·577 inch bore costs 3*l.* 2*s.* 0*d.* per 1,000 rounds. The increased expense of the former is due to the description of powder employed, and to the doubt whether the process now used in the manufacture of the present service bullet of pure lead would be applicable to a hardened bullet. Both these difficulties the

* The Committee have learnt from Colonel Dixon, R.A., that the price of the new Service Snider Enfield ·577-inch bore, with steel barrel and bayonet, is 2*l.* 13*s.* 2*d.* They have reason to believe, from information they have received, that the cost of the Martini-Henry arm will be diminished when experience is gained in its manufacture. They would also point out that the barrel of the Martini-Henry arm is stronger than that of the new Service arm.

Committee believe will be overcome. They have made trials with satisfactory results of a powder manufactured at the Government factory, which can be made for about the same cost as the present service powder, and would therefore reduce the estimate by 11*s.* 1*d.*, whilst they confidently hope that Colonel Boxer will devise a method for manufacturing the Henry bullet as cheaply as by that at present in use. They would point out also that the use of a solid bullet will render unnecessary the labour and machinery for hollowing the bullets as well as for making the clay plugs and fixing them in the present service bullet.

Conclusion.

Referring to paragraph V. of War Office advertisement 22.10.66, viz., "that the "Secretary of State will take care that no ingenious novelty produced in answer to this "advertisement shall be adopted into the service without proper acknowledgment, and "that the name of the individual with whom it originates should be recorded in connec- "tion with it," the Committee are of opinion that in the event of the arm and ammunition recommended being adopted into the service, the arm should be called the "Martini-Henry," and that the name of "Henry" should be added to that of "Boxer," which at present stands on the service ammunition, and the ammunition should be called the "Boxer-Henry." They are also of opinion that Mr. Martini should receive a reward for his breech mechanism, and Mr. Henry for his barrel and ammunition.

H. C. FLETCHER,
Captain and Lieut.-Colonel Scots Fusilier Guards,
President.

J. RAWLINS,
Captain 48th Regiment.

W. MACKINNON,
Captain 3rd Regiment.

SPENCER.

EDWARD ROSS.

Royal Arsenal, Woolwich,
Feb. 11, 1869.

REPORT ON REPEATING ARMS.

(With reference to W. O. Letter 21.3.67 and Report No. 4636 of 4th July 1867.)

Repeating arms before the Committee.

The Committee have the honour to forward their report on the repeating arms which have been brought under their notice.

They had before them the

Ball and Lamson.
*Henry.
Larsen.
Spencer.
Vertelli.
Winchester.

Of these the Winchester and Vertelli were submitted at a late period of the inquiry, the latter at the special request of the Committee. For the Larsen arm no ammunition was supplied, and it appeared open to objections similar to those observed in the single loader of the same name and maker, one of which was blown open. (See Appendix III. page 69.)

Trials of repeating arms.

These arms, with the exception of the Larsen, were subjected to trials somewhat similar to those which were imposed on the breech mechanisms of single loaders. A few shots were also usually fired for accuracy, in order to prove the suitability of the cartridges in that respect for a military arm.

The following is a short description of the

Ball and Lamson,
Spencer,
Henry arms, and ammunition.

ARMS.

Ball and Lamson.

The magazine is a tube in the woodwork of the stock under the barrel, capable of containing eight or nine copper rim fire cartridges, which are constantly pressed towards the breech action by means of a long spiral spring. This supply can be shut off and the arm used as a single loader.

The breech is closed by a block swung backward and forward by means of a lever which forms the trigger guard; the cartridge is fired by a hammer driven by a common side lock, which strikes an exposed portion of the rim.

The face of the block is cut to the shape of the cartridge and its rim, and thus holds the cartridge, which (supplied either from the magazine or placed in it by hand when the action is open) rides in the block; on drawing back the lever the block is swung forward, the cartridge lodged in the chamber, and the breech closed; on moving forward the lever the block is swung back (drawing with it the empty shell, which is flipped to one side by a spring released by this motion), and laid opposite the magazine, from which it can receive a fresh cartridge. Length of arm 3 feet 1 inch.

Spencer repeating rifle.

The magazine is a metal tube in the stock capable of holding seven copper rim fire cartridges pressed against the action by means of a spiral spring:

The cartridge is exploded by a loose piston struck by the hammer of a common side lock The breech is closed by a block swung backwards and forwards by means of a lever which forms the trigger guard.

On pushing forward the lever, the block is swung back, the breech opened, the empty cartridge case withdrawn and ejected by being made to travel over a guide, and a cartridge from the magazine allowed to pass in front of that part of the block which contains the striker and which closes the breech, and is retained there between a part of the block and the guide. In drawing back the lever into its place the block is swung forward, pushing the new cartridge into the chamber, and after bringing the hammer to full cock, the gun is ready to be fired.

Length of arm, 3 feet 6½ inches.

* This is not the Mr. Henry referred to in the previous Report.

The magazine is a tube under the barrel capable of containing 15 drawn copper rim fire cartridges, which are constantly pressed by means of a long spiral spring into the tray or feeder which supplies the chamber. Henry repeating rifle.

The breech is closed by a sliding bolt, consisting of three main pieces; it closes the breech, conveys the blow of the hammer to the cartridge and carries the extractor. The action is worked by a long lever, forming the trigger guard and terminating in a handle; on moving forward this lever the bolt is withdrawn, the gun cocked, the empty cartridge case extracted, the tray holding a cartridge from the magazine raised opposite the chamber, and the empty case lifted out; on drawing back the lever into its place the bolt is moved forward (pushing before it into the chamber the cartridge) and the tray is lowered, when the magazine spring deposits another cartridge in it, the gun is then ready to be fired; the hammer can be placed at full cock, independent of the lever.

Length of arm, 3 feet 7 inches.

AMMUNITION.

Name.	Description of Cartridge.	Length.	Weight.	Description of Bullet.	Length.	Diameter.	Weight.	Powder.
		ins.	grs.		ins.	ins.	grs.	grs.
Winchester	Drawn copper, in two pieces, the powder case fitting into a base cup, which has a rim for extraction, central fire, the fulminate held between base of cup and a perforated metal disc.	1·99	500	Pure lead, solid cylindro-conoidal, 4 cannelures, portion in case slightly smaller in diameter.	·82	·46	320	50
Henry -	Drawn copper case, Rim-fire.	1·34	326	Pure lead, solid cylindro-conoidal, point flattened, 4 cannelures, lubrication apparently wax.	·72	·44	255	23
Spencer -	Drawn copper case, Rim-fire.	1·6	480	Pure lead, solid cylindro-conoidal, two cannelures, wax lubrication.	·82	·5	350	46
Ball and Lamson.	Drawn copper case, Rim-fire.	1·66	477	Pure lead, cylindro-conoidal, two cannelures, solid, compound lubrication, chiefly tallow, apparently.	·86	·5	350	50

TRIALS.

The following comparative trials were made of the three systems:— Trials.

Two targets of 20 shots each from shoulder rest were made from each of the three arms at the 500 yards range. The results were as follows:— Accuracy.

——	Mean Deviation.	
	1st Target.	2nd Target.
	Ft.	Ft.
Ball and Lamson - -	3·66	1·83
Spencer - - -	2·65	2·07
Henry - - -	2·53	4·62

The trials for rapidity were as follows:—

The Ball and Lamson magazine containing eight cartridges was loaded and the magazine emptied five times, giving a total of 40 shots fired in 2 minutes and 52 seconds. It was then fired as a single loader without using the magazine at the rate of 20 shots in 1 minute and 15 seconds. Rapidity Ball and Lamson.

Spencer. The Spencer magazine containing seven cartridges was loaded and the magazine emptied twice, giving a total of 14 shots, in 1 minute 33 seconds. The cartridges then jammed in the magazine while refilling it, so that the stopper could not be forced home. The trial was discontinued.

Henry. The Henry magazine containing 15 cartridges was loaded and the magazine emptied three times, giving a total of 45 shots, in 1 minute 36 seconds.

Sand Trials.

The arms were then put through the sand trials in the usual manner, sand being thrown over the breech actions both open and closed and the arms fired.

The results were as follows:—

Ball and Lamson. The Ball and Lamson stood the test well, although there was some little difficulty in firing the last three shots.

Spencer. The Spencer worked stiffly. Three shots were fired with great difficulty, and the rifle became unserviceable.

Henry. The Henry stood the test very well, and worked satisfactorily.

Decision on the three systems. After a careful consideration of the results of these trials, and an examination of the breech arrangements of the three arms, the Committee decided that the Henry system was on the whole most suitable for a military weapon. But they were also of opinion that a repeating arm, in order to be adapted for the requirements of the service, should be capable of being employed as a single loader, the magazine being kept in reserve for use in case of need.

Communication made with the Winchester Rifle Company. Having understood that this improvement had been embodied in the Winchester rifle, which was on the same principle as the Henry repeating arm, the Committee communicated with the Winchester Repeating Arms Company, in America, requesting them to furnish two specimen arms with suitable ammunition.

Arm received. One of these arms was received about the middle of October 1868. It was similar in construction to that previously described as the Henry, but contained the improvement already alluded to, viz., the capability of being used either as a single loader or a repeater. It was also more suitable for an infantry weapon in point of length and ammunition.

Description of the arm. The following is a description of this arm in those points in which it differs from the Henry already described:

Length from bottom of butt to muzzle	49⅛ inches
Weight without bayonet	8lbs. 12½ oz.
Length of barrel	29¾ inches
Calibre	·45 inch
Number of cartridges in magazine	12
Number of cartridges to one pound	About 14.

The magazine is loaded at the end nearest the breech in place of the end nearest the muzzle, and the arm can be used either as a single loader or a repeater.

Experiments are made. Experiments similar to those to which the other repeating arms were subjected were made with this arm.

Accuracy. Two targets of 20 shots each were made at the 500 yards range from shoulder rest with mean deviations of

1·46 feet,
1·45 feet,

and one target of 20 shots was made at the 800 yards range with a mean deviation of 3·66 feet.

Rapidity. When used as a single loader 20 shots were fired in 1 minute 4 seconds. When used as a magazine arm, 25 shots were fired in 1 minute 18 seconds. The time occupied was—

Loading	25 seconds
Firing twice	28 „
Loading	25 „
Total	1′ 18″

Sand trial. There was some difficulty in making this trial, as the lever which opens the breech had been made too weak and became bent and unserviceable.

It was also found that if sand were thrown over the breech mechanism when closed there was some difficulty in working it. If thrown over it when open, the parts became completely jammed, and the arm consequently unserviceable.

The Vertelli arm received.

About this time a Swiss repeater, named the Vertelli arm, was submitted privately to the Committee.

It contained in the magazine 15 rounds and could also be used as a single loader.

The Winchester arm preferred.

After examination and trial, it was decided that the Winchester repeater was simpler in construction and better adapted to the purposes of a military weapon than the Vertelli, and that it was the most favourable specimen of a repeater that had yet been brought before the notice of the Committee.

Decision on repeating arms.

Notwithstanding, the Committee are not prepared to recommend a repeater for general adoption into the service.

The mechanism of the Winchester is more complicated than that of the Martini and many other single loaders; it is also more liable to injury, and not so well calculated to resist the wear and tear of service.

The principle of closing the breech by means of a bolt is open to the objections already urged against bolt guns in the report on the breech mechanisms of single loaders, *vide* page 10.

For general use by infantry, the weight of the arm when the magazine is loaded is objectionable.

With regard to rapidity of fire, that of the Martini and other single loaders is so great that, except under very exceptional circumstances, nothing further in this respect can be desired.

There may, however, be occasions when a repeating arm might be useful, and if such should be the opinion of the military authorities, the Committee recommend that the Winchester arm should be taken as being the best that has been brought before their notice, and that it be strengthened and otherwise modified to render it more suitable as a military arm.

H. C. FLETCHER,
Captain and Lieut.-Colonel Scots Fusilier Guards,
President.

J. RAWLINS,
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W. MACKINNON,
Captain 3rd Regiment.

SPENCER.

EDWARD ROSS.

Royal Arsenal, Woolwich,
Feb. 11, 1869.

REPORT ON COMPRESSED POWDER.

The subject first brought before the Committee.

The Committee were first led to the consideration of the subject of cartridges made up with compressed powder by Colonel Boxer, Superintendent Royal Laboratories, who informed them, in January 1868, that from the results of the comparatively few trials he had made he was of opinion that compressed powder would answer well in breech-loading rifles if manufactured in the manner he described, viz., by making a cavity in the centre of the charge, to allow of sufficiently rapid ignition.

The advantages of using compressed powder were at once evident, especially if the ·45-inch bore should be adopted, as the length of the cartridge case would be reduced, and the ammunition would consequently be more portable and better adapted to some systems of breech mechanism.

Additional evidence obtained.

The attention of the Committee having been directed to the subject, they obtained additional evidence from Colonel Boxer, R.A., Capt. Noble, R.A., and Mr. Abel, chemist to the War Department, which is given in Appendix I., pages 39, 59, 66.

Barrels ordered.

This evidence appeared so satisfactory that it was thought desirable to request each of the gentlemen who were preparing barrels for the accuracy trials to put in hand four additional barrels, in order to make comparative experiments of the compressed powder cartridges from their several systems of rifling.

Barrels not to be chambered.

As, however, it was necessary to ascertain the relative strengths of the compressed and loose power, in order to lay down the proper charge with which to make these experiments, and as its ultimate success was still doubtful, it was resolved that the barrels should not be chambered until the Committee had decided on these points. This was the more necessary as the length of cartridge case, influencing the length of chamber, depended on the amount of powder charge.

Trials to be made from a ·45 bore.

At the time when the question of compressed powder was brought before the Committee, they had decided that the experiments for accuracy should be made from a ·45-inch bore. It was therefore requisite to make trial of the compressed powder from that bore.

The Henry ·45 bore.

The Committee had before them the Henry ·45-inch bore, which had given fairly good results during the first competitive trials, but of which the shooting was greatly marred by occasional strip shots.

Mr. Henry sends in improved ammunition.

Whilst they were considering the question of making experiments with the compressed powder, Mr. Henry submitted to them some improved ammunition, which he requested might be tried from his rifles sent in for the first competitive trials. The improvement principally consisted in the substitution of pure beeswax as a lubricant in place of beeswax and tallow, and of a bullet hardened with tin in place of one of pure lead.

The chambers of the Henry rifles shortened.

The results of trials made with this ammunition were so good that it was determined (with the sanction of Mr. Henry) to shorten the chambers of two of his competitive rifles, and with ammunition made up in a similar manner, excepting in respect to the powder, to conduct the necessary experiments with the compressed charges, the aim being to arrive at conclusions which would justify the Committee in laying down the amount of powder charge, in order that the gentlemen who were preparing barrels might be enabled to chamber them and carry out separately their own experiments, before submitting the barrels for the Committee's trials.

The object of the proposed trials.

Experiments made from the ·45, the ·5 inch and the ·577 bores.

This was accordingly done, and comparative experiments were made between Mr. Henry's ·45-inch bore adapted for compressed powder and a similar barrel adapted for loose powder. At the same time, and in consequence of a favourable report received from Colonels Dixon and Boxer, experiments under similar conditions were made between ·5-inch barrels manufactured at Enfield.

Questions to be decided.

The questions to be decided were :—

1st. The description of powder best adapted for compression.

2nd. The method and degree of compression.

3rd. The comparative strength of compressed and loose powder charges, and consequently the size of the pellets.

With the assistance of Colonel Boxer, R.A., Superintendent Royal Laboratories, and Captain Noble, R.A., a long series of experiments was carried out to determine these points. They were commenced in May 1868, about the time of the sending out of the circular letter to the gentlemen who were preparing barrels for accuracy, and were not terminated until October.

The experiments when carried on.

The first question to be decided was the description of powder best suited for compression.

First question to be decided.

In this the Committee were guided by information obtained from Colonel Boxer, which was subsequently borne out by their own experiments, the conclusion being, that the F.G. powder gave better results when compressed than either the F.G.R. or the Curtis and Harvey No. 6.

F. G. powder gives better results than F. G. R. or Curtis and Harvey.

With regard to the method of compression, it was found from experiments, of which the details are given in Appendix XVIII., page 82, that the original method of compression was the best, viz., in one pellet with pressure applied at one end of the pellet, so that its densest portion should be next the cap, and the lightest portion next the bullet; the perforation being in the dense end and the indentation in the light end.

Method of compression.

With regard to the comparative strength of compressed and loose powder, the results of the experiments with ·45 and ·5 inch bores were at variance with the evidence received, which was probably based on previous trials made with the ·577-inch bore, *vide* Appendix XVIII., page 85.

The strength of compressed powder.

It had been supposed that the strength of the compressed F.G. powder was greater than that of Curtis and Harvey's loose powder, the same weight being used; but from the experiments made by Captain Noble, R.A., to determine the initial velocity of bullets, it was found that from a Henry ·45-inch bore a charge of 86 grains of compressed F.G. powder was required to give equal results to those obtained from a charge of 85 grains loose powder, Curtis and Harvey's No. 6, and from the ·5-inch bore Snider that the charge of 75 grains compressed F.G. powder did not give equal velocity to 80 grains loose powder F.G.R., the description of powder used with that arm.

Furthermore it appeared that the relative strength of compressed powder diminished in a small bore as the charge was increased, and consequently lengthened.

The results of these trials for velocity, together with many interesting details, are given in Appendix XVIII.

In conjunction with these trials, experiments for accuracy were made from the ·5-inch barrels manufactured at Enfield and from the Henry ·45-inch bore barrels, the object in view being (as before stated) to fix the charge so that the gentlemen preparing barrels should be in a position to conduct their own trials. The results of the experiments with the ·5-inch bore showed that equally good results could be obtained from compressed as from loose powder, and that the cartridge could be shortened by half an inch.

Experiments for accuracy.

Results from a ·5-inch bore.

The trials with compressed powder from the ·45-inch bore, although not so satisfactory, seemed to warrant the Committee in fixing the charge of compressed powder at 86 grains, and a letter was accordingly sent, on the 24th June 1868, to the several gentlemen preparing barrels, informing them of the results already obtained, and requesting them to continue the experiments. At the same time an offer was made to supply cartridge cases with compressed powder charges from the Royal Laboratory. It was further suggested that, should any variations in the charges be thought desirable, the Committee should be informed, so that the views of the gentlemen who were preparing barrels might be carried out. A letter was also sent to Colonel Boxer, R.A., requesting him to continue the experiments with compressed powder from a ·45-inch bore, and inform the Committee of the result.

From a ·45 bore.

The charge fixed and letter sent to gentlemen preparing barrels.

Letter sent to Col. Boxer, R.A.

Many of the gentlemen preparing barrels applied for a supply of compressed powder cartridges, and Mr. Henry in particular devoted much time and care in conducting experiments before submitting his barrels on the same system of rifling as those for loose powder, but chambered for the compressed powder cartridges.

Applications made for cartridges.

The Committee regret to state that the results of the experiments, including those made by Colonel Boxer, were not satisfactory. The accuracy and regularity of shooting from a ·45-inch bore with compressed powder charges were not equal to those obtained from loose powder charges, *vide* Appendix XVIII., page 85, nor was the reduction in the length of the cartridge case, which was only half an inch, a sufficient gain to compensate for the deterioration of the shooting.

The results of the trials not satisfactory.

The Committee therefore decided that, with their present knowledge of compressed powder, they could not recommend its adoption into the service for cartridges for a ·45-inch bore. At the same time they consider that some improvement in the present powder might possibly be made by which the length and bulk of the cartridge would be reduced.

Decision on compressed powder for a ·45 bore.

Assistance received from Mr. Henry.

The Committee desire also to point out the assistance which they received from Mr. Henry in carrying out their experiments with compressed powder. The good shooting of his rifles with loose powder enabled them to make trial of compressed powder from a ·45-inch bore by shortening the chambers of his barrels, whilst the early preparation by Mr. Henry of his rifles, in response to the Committee's letter of the 9th March 1868, enabled him to conduct many experiments with compressed powder at the expense of much time and labour, the results of which he communicated to the Committee. Therefore, although the experiments already made have not led to the desired result, the Committee feel that they are none the less indebted to Mr. Henry for his assistance.

H. C. FLETCHER,
Captain and Lieut.-Colonel Scots Fusilier Guards,
President.

J. RAWLINS,
Captain 48th Regiment.

W. MACKINNON,
Captain 3rd Regiment.

SPENCER.

EDWARD ROSS.

Royal Arsenal, Woolwich,
Feb. 11, 1869.

APPENDIX.

APPENDIX I.

MINUTES OF EVIDENCE TAKEN BEFORE THE COMMITTEE ON BREECH-LOADING RIFLES.

War Office, Thursday, 6th February 1868.

PRESENT:

LIEUT.-COLONEL H. C. FLETCHER, SCOTS FUSILIER GUARDS, IN THE CHAIR.

CAPTAIN J. RAWLINS, 48th Regiment.
CAPTAIN W. C. MACKINNON, 3rd Regiment.
EARL SPENCER, K.G.
E. ROSS, ESQ.
CAPTAIN R. W. HAIG, Royal Artillery, Secretary.

Lieut.-General CHARLES HAY examined.

Lieut.-Gen. C. Hay.

6 Feb. 1868.

1. (*Chairman.*) As Inspector General of Musketry, your attention has been a good deal directed to the question of rifles for some years past?—Yes, for about 13 years.

2. The Committee wish to know what you consider to be the principal requisites for a military arm, more especially with reference to the trajectory and accuracy in firing, and how they bear upon each other?—I consider that one of the essential points for the mass of the troops is to have a flat trajectory, and as flat as you can get it—it is a question really of judging distance.

3. Do you conceive that a flat trajectory is even of greater importance than extreme accuracy in firing?—Yes, at short distances. Decidedly, you must have a certain amount of accuracy; but I should waive much of that at short distances for the purpose of having a flat trajectory for the mass of the men, and when I speak of short distances I mean up to 400 or 500 yards.

4. With regard to the best weight for a military arm, do you consider the present weight, 9 lbs. 8 ozs., a good weight?—I think you may maintain that if you give a better material. If weight is to constitute strength, decidedly our present arm is not strong enough, I consider it is lamentably weak.

5. In what parts do you consider it is weak?—Particularly as you come up to the muzzle, within about 18 inches of the muzzle it is too thin, because there it is scooped out. I have known men in going to the right-about at the slope dent the rifle, and the rifle is then not worth sixpence, it is too weak decidedly. I may say that I recommended many years ago that three inches should be cut off and added to the weight. I do not like increasing the weight if you can compensate it. I have written three or four times about that, taking off about three inches and putting it into the weight of the rifle, I believe that you need not increase the weight.

6. In your opinion it is too weak, not only as a shooting arm, but too weak for service?—Yes, it is too weak for service; it is destroyed in common marching work that men would have to go through in campaigning, and then of course the shooting would be destroyed.

7. Do you think that weakness would be avoided by having a steel barrel?—Yes, to a great extent.

8. With regard to the length of the barrel, supposing that a shorter barrel, say 3 feet long, should be found equally good for shooting, do you see any objection to it?—I cannot conceive any objection. I have recommended over and over again a 3-feet barrel, and many officers with whom I have conversed upon the subject have admitted that a shorter arm would answer all the purpose.

9. Would there be no danger of accident from the muzzles of the guns in the hands of the rear rank men not clearing the front rank?—There might be a trifling risk in that with muzzle-loaders, but certainly not with a breech-loader, because the ranks do not come to the present at the same time; there was perhaps a chance of injuring the front rank men, but still a very remote one, if the men were properly drilled; now that is obviated by the breech loader, because the men are never up to present at the same time.

10. Supposing the weight of the rifle, apportioned in the best way to be 9 lbs. 8 ozs., what, in your opinion, is the best bore for a military rifle?—That is a question which I conceive is to be settled entirely by the weight of the bullet you intend to fire—you must first deal with the weight of lead; 13 years ago one of our first mechanics, Mr. Whitworth, settled the question theoretically by the ·451 bore for a given weight of lead, that is 530 grains, and the theory then propounded by him has been proved, by 12 or 13 years' practical experience, to be right. If the ·451 bore was the right thing for 530 grains of lead, I think it is quite clear that if you reduced the weight of lead you should in the same ratio reduce your bore, unless you choose to do what they have done with the Snider, and sacrifice penetration by putting wood into the bullet instead of lead. You must say what quantity of lead you will fire, that is the point—you must settle that before you settle the bore.

Lieut.-Gen. C. Hay.

6 Feb. 1868.

11. Is there any advantage for military purposes in having a bullet of 530 grains of lead?—Not the least in the world; the idea was entertained some nine years ago, when they got hold of some story about the late Duke of Wellington to this effect, that you could not break a horse's leg with anything under a certain weight, and I being a very strong advocate for a small bore, tried every experiment that I could to meet the opposition that I met with, and among other experiments I tried the effect of a small bore bullet against the thigh bones and shin bones of men. I fired at them from a distance of about 80 yards. I put them up enclosed in canvas, and I fired at them to see what this small-bore bullet would do, and I found that it completely shattered the bone. On one or two occasions a thigh bone was so shattered by a shot, that if it had not been for the canvas holding it up the lower part would have fallen away from the upper part, and, what is more, the bullet, after shattering the bone, went through eight or nine planks that were behind it.

12. Was that a solid or a hollow bullet?—It was a solid bullet, and the weight of it was 530 grains. The idea entertained was that these small-bore bullets would not shatter, and I wanted to show that it was weight and velocity that did the work.

13. Would a lighter bullet be equally serviceable?—Yes. I have not the slightest doubt that 450 grains would do more than you could desire to do.

14. Was it a hardened bullet?—Yes, it was a hardened bullet.

15. In order to get some guide as to the bore, you say that it is better first to fix the weight of the bullet; what weight of bullet would you recommend?—By the light of our present experience, I should say that a bullet for the mass of the troops should not exceed about 440 or 450 grains, but I should wish for a bullet for long-range shooting that would weigh 500, and not less than 500 grains for long-range shooting. If the Committee will allow me, I will read a short extract from the report that I made in 1862 in answer to some observations by the Select Committee. This is the remark that I made: "I am quite alive to the "great inconvenience different ammunition must en- "tail. For these reasons, while I consider it indis- "pensable that all 'marksmen' should be armed with "the best possible rifle, it appears to me that no "pains should be spared to render possible the "adoption of a rifle of one uniform bore, such as "while it would enable the mass of our infantry to "maintain rapid and accurate shooting with a very "low trajectory to 500 or 600 yards, would at the "same time by a slight change in the ammunition "enable the 'marksmen' to command accurate shoot- "ing at 1,100 and 1,200 yards." That was the evidence given in 1862, and I entertain the same opinion now, and indeed I am more confirmed in that opinion than ever.

16. You think there is no objection to two ammunitions?—Not the slightest. If a man had to use ammunition of two kinds he would have perhaps 10 rounds of one and 80 rounds of the other; the only possible effect would be that he would be firing a little too well; he would be able to load just as easily, and he would be firing with the mass of the men at 300 yards, only with superior ammunition if it happened that he ran out of his 80 rounds of common ammunition.

17. If you had a bullet for the mass of the troops, to weigh 450 grains, and for the marksman 500 grains, do you think that would be sufficient?—If I was obliged to fix a standard I should not put it at more than 440 grains and 500 grains.

18. You would fix the bore with reference to the weight of the bullet, upon what weight would you fix the bore?—I certainly should not go beyond ·451, but rather below that. I should make that my maximum most decidedly. Mr. Whitworth had the problem to solve of how he should get the best shooting with a given weight of lead, and he settled ·451; he started a turn in 20 inches, and he did get the best shooting with that weight of lead. If Mr Whitworth's theory is sound you must follow that out, and you must reduce your bore even a little more. I believe that ·451 should be considered quite the maximum; I think it is a question whether you should not go below that.

19. That was fixed, I believe, on the supposition that a 530 grain bullet would be used?—Yes, and it was not for years afterwards that they went to 480, not till after our Committee; and one of the reasons given by me in my memorandum was that by adopting the smaller bore in preference to the Enfield bore it enabled you to reduce the weight of the bullet if found necessary.

20. There is another difficulty, is there not, as to having two ammunitions for the same rifle, viz., as to the sighting. I suppose that the sighting would be different?—The Whitworth rifles were double-sighted; but when you consider that up to 300 yards we do not in action use any sight at all, there could not be very much difficulty.

21. If ·451 bore was adopted, what twist, in your opinion, is necessary?—You must have one turn in 20 inches, and a bullet of about 3 diameters in length without weakening it by wood, the penetration of the Snider bullet is more than one plank less than the muzzle loading Enfield, simply because the proper length of bullet must be kept up by adding wood; you must have a three-diameter bullet, and I think you ought to keep that without packing the bullets, that is, not putting wood into them. The penetration of the Snider rifle, firing the same weight of lead, is more than a plank, it is a plank and a half difference, and why is that so? Simply on account of your having to keep up your length by putting in wood.

22. Do you consider that a solid bullet is better than a hollow one?—Yes, decidedly; it is more easily manufactured, and it does its work better.

23. Do you consider that a bullet of pure lead is necessary?—I should harden it, but I think the extent of the hardening is a matter of trial. You cannot harden your bullet beyond a certain point, unless you shallow your groove to such an extent that the rifle would be perfectly useless in a military arm. In some of the match rifles, Rigby's, for instance, they shallow the grooves to such an extent that the rifle would be utterly useless to a soldier.

24. Do you consider that an expanding bullet is necessary? Is it as good as or better than those bullets which are forced into the barrel?—I think so certainly; in my opinion forcing is decidedly wrong, because it is accompanied with a loss of power.

25. It tends to leading the barrel, does it not?—Yes, and it is contrary I think to all principle, forcing the bullet past the lands.

26. When you say that a bullet should not be hollow, it ought, I presume, to be sufficiently so to produce expansion?—You may make it hollow or solid; if you have a long bullet it will expand, where a short bullet without an auxiliary will not—it shuts up. If you found that you could increase the expansion by hollowing it at the base, I think there is no objection to that, it must expand.

27. The new bullet that has been made by Colonel Boxer has not a plug at the end but is almost a hollow bullet?—That I consider most objectionable, because the bullet is so weak. I have no doubt that if you fired that bullet against planks you would find that its penetration would be two planks at least less than the Enfield, and that would be going back. I think you should go forward, instead of which we are going back. With regard to the trajectory, you are losing that, and you are also losing penetration.

28. Do you consider penetration of very great importance in a military bullet?—Yes, and we tried experiments in the Committee that I was upon; we fired through gabions and through fascines. The Whitworth bullet used to whistle through those things, while the others would not go, they stuck in the middle; the penetration of the hardened Whitworth bullet was something like 25 planks *versus* about

12 or 13. I tried an experiment, and found that the velocity of the Whitworth bullet was so great even when it had travelled 800 yards, in comparison with the other, that supposing both bullets were travelling alongside each other, one would go through just about a third more than the other.

29. With regard to the description of rifling that you would recommend, I think you have already stated that it is not advisable to have very shallow rifling?—You cannot have very shallow rifling, because I think the lands would wear out. If the lands get worn by rubbing the rifle becomes a smooth bore.

30. Have you formed any opinion as to which is the best description of rifling?—My experience has been principally with muzzle-loading rifles, and I think there cannot be a shadow of a doubt that the best principle for rifling is Whitworth's. I have gone into that question and have given diagrams of the firing, and have shown why the loading should be as easy after shooting as before. I have given the experiments after the trials and after a great deal of firing.

31. We are now dealing with breech-loaders?—Yes, and I still think that the polygonal rifle is a sound thing. You cannot get over this, that in the one case you are dealing with straight lines instead of curves; you are dealing with planes, while in the other things you are dealing with curves, and that must be, in a mechanical point of view, an advantage.

32. Do you know the Lancaster rifle?—Yes.

33. Is an elliptical bore, opinion in your applicable to military purposes?—I think it is a good military weapon as long as you keep the major diameter considerably larger than the minor, the groove is pretty deep.

34. Have you seen the Lancaster rifle tried as a small bore?—Yes, I have seen the trials, and in all the trials with the small-bores the Lancaster rifle was nowhere. In all the Woolwich trials, and in all the competitive trials for the National Rifle Association, Lancaster retreated and never came there.

35. Was that with a muzzle-loader?—Yes; the beauty of the polygonal rifling is this, that you have no such thing as land, it is all groove, the land is merely just a point in the centre of the flat, it is all groove; the instant the bullet begins to depart from the line in the centre it is in a groove, and it need not go to the bottom of it, and the reason why you could go on loading with that rifle is manifest.

36. Did it not at the same time cause one or two wild shots when the fouling had accumulated very much?—You did not get such good shooting, but you got your rotation, and if it did not expand above half the length of the flats it was still in the grooves. I will explain what I mean; the instant it expanded it did not want to go to that angle (*describing*), but if it expanded half way, it had sufficient rotation to guide it; the system was found good, because it had a maximum rifling surface, and you should have as much of that as you can.

37. The reason why I asked you the question as to occasional wild shots was because it was found that one of the rifles we have been trying would fire very well for a certain time, and then it would not strike the target, and we thought that that might have been occasioned from the fouling having accumulated, and having thrown the shot off before it had cleared the barrel?—I have fired with blank ammunition, and I have reduced the charge so as not to expand the bullet. I have reduced it to 50 grains. I tried to get a strip from it, but I could not shut the rifle up with very inferior ammunition. I believe that the polygonal system has been proved to be sound in the case of the breech-loader. We have the Westley Richards, and as far as the public trials will go to show it, the Westley Richards rifle, I think, has almost kept its own against anything at long ranges; I think it shoots most beautifully at long ranges.

38. With regard to the bullet, do you consider it is better to have paper on the bullet than not?—Not so, if you can get a bullet that will shoot without fouling. If you can do that why should you have the paper?

39. If no paper was used, would you put any lubrication on the bullet?—In the cannelures.

40. Have you formed any opinion as to whether it is best to use paper with lubrication on it, or to place the lubrication on the cannelure of the bullet?—I really do not think it is material, but I should never object to a cartridge because it happened to require paper on bullet. We know that it lasts for an immense time. It was found that there was an acid in the grease, and that used to corrode the bullet in hot climates. I think the lubrication is now well understood. I do not think it is material, but I think in most instances you will find occasional leading without paper, particularly if you go to a small-bore.

41. But that is not of such great consequence with a breech-loader, because it is more easily removed?—No.

42. With regard to the charge of powder, what charge do you consider the best?—If you went so low as a 440-grain bullet I should be inclined to use 70 grains of powder.

43. Suppose we adopted 500 grains, what charge would you recommend?—Then I should add, I think, another 10 grains, and use 80 or 85 grains.

44. Have you seen the new cartridges which are made of compressed powder with an air chamber running up the centre?—Yes, I have tried that powder, and my experience of it went to show that in moderate weather or in warm weather it shot remarkably well, but directly frosty weather came then it fouled the gun.

45. Can you account for that in any way?—I would account for it in this way. There is a certain gum or moisture which is mixed up with it, and I thought that this gum or moisture got to a certain extent frozen; you have to get rid of this damp in some way or other, it quite upset our theory as to the necessity for having the large grained powder, so that the flame might ignite the powder and get to the front of the charge; these were made solid, there were little grains, but they all stuck together, therefore, according to the old theory, where were the interstices for the flame to get through? I found that it shot most magnificently in warm weather, and it was simply this, that the flame was passing outside—it ran forward outside, and then reached the centre from the sides.

46. In the ammunition that is at present made of compressed powder, there is a sort of air chamber which runs up the centre of the cartridge?—It runs up in order to meet the difficulty which I have spoken of, that of having no interstices between the grains; the objection I find to the long air chamber is that it lengthens the column of powder and consequently the cartridge.

47. It might obviate fouling, might it not?—It might do that, but I do not think there is any fault in the ignition, for I got most magnificent shooting with it.

48. There is great advantage in it, if the theory is correct, because the powder is considerably stronger, and therefore a smaller quantity is required?—It is stronger, no doubt, but it must be made in a different way—there must be a different incorporation, and a difference in the materials; there must be, I think, more saltpetre; this is not compressed powder in grains, but it is made in a sort of paste.

49. I believe the grains are preserved?—I have tried the powder very much, and I think Whitworth has tried it; he wanted to use it for field guns. My experience of it was that it was an utter failure in frosty weather, and I did not go on with it.

50. Do you find that there is much more fouling in rifles in frosty weather than in dry weather?—They fire better in summer or in warm weather than in winter, and for this reason, that the lubrication is better, that is to say it is more slippery. I found that

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I had the best shooting when the barrel was so hot that I could hardly hold it.

51. One of the objections to small-bores is that they are liable to foul from continual firing, so as to interfere with their shooting qualities?—I do not think so, unless the ammunition is not properly made. I do not see why you should not go on shooting for ever with them if the ammunition is properly made. I have a report here that I made to a former committee on that head: "After 24 shots with the Whit-" worth rifle No. 132, with 70 grains of powder, ·432 " bullet, from Woolwich (waxed); after firing 440 " rounds without cleaning on different days at a range " of 600 yards, the angle of elevation being 1° 32′;" and the figure 1·12 ft.

52. How were those rounds fired?—From a rest in a gale of wind. I tried the experiment afterwards and I then fired 21 rounds. I fired two rounds of blank just to see the effect. I passed my 21, and then I fired two rounds of blank cartridge. I expected that my bullet would drop, but between 21 and 22 there was only a difference of 3 inches between the two shots; that was pure beeswax. I applied officially and got the bullet reduced and dipped in beeswax at Woolwich.

53. Did you fire any of those rounds with great rapidity between the firings?—Yes, I fired them as fast as I could, some 20 and some 30 a day.

54. Supposing you fired sufficiently fast to heat the gun greatly, do you think that would be likely to injure the shooting?—I think it would rather improve it; but perhaps I am wrong in saying that, for my trials have been more for rapidity of shooting than otherwise, and I have always found the loading to improve the hotter the rifle was; it was more a matter of loading that I went into, but the shooting was all very good.

55. Ought not a gun to stand 100 or 200 rounds fired with great rapidity, and shoot well after those rounds have been fired?—Yes, it ought to shoot well decidedly.

56. Would it tell against a gun if it deteriorated greatly after 100 rounds had been fired with great rapidity. Suppose you began for accuracy first, then fired some rounds quickly, and then began for accuracy again?—If the shooting should be very wild it would of course tell against it. I do not think you could expect the same accuracy of shooting, although, if the ammunition is all right, I do not think it can make much difference. It is entirely a question of ammunition whether the gun fails or not.

57. When you say it is entirely a question of ammunition, what do you mean? I mean that the powder must be good, that the expansion must be all right, the bullet must be of its right length, and the lubrication must be all right. These Snider rifles might be fired I believe any number of rounds without fouling with good ammunition. I have had some of my supplies which were not all right, and the fouling was considerable, even after 10 rounds; indeed so much so after 10 rounds that I could not get the plug in to take the angle. That shows that even with this beautiful Snider ammunition, excellently and wonderfully made as it is, if it is not made with perfect care it fails, even with fresh hands it was better made under the auspices of those who were directing the makers than any manufacturer almost could secure; and all the failures in shooting with the breech-loaders, I am satisfied, supposing everything else to be right, are due to the want of care in making the ammunition, this Colonel Boxer has got over, because he can apply a remedy on the spot; he has advantages, and the result has been a most wonderful cartridge. But I believe that any small-bore cartridge with some pains and expense could be made perfectly good. I am perfectly sure that Colonel Boxer could make you a small-bore cartridge just as good as any other.

58. Is it not the case that the shooting from the same description of breech-loader is worse than the shooting from the same description of muzzle-loader, and that the shooting generally from breech-loaders is rather deteriorated?—I have not found any deterioration in the Snider at all.

59. Is not that because they have improved the ammunition?—Entirely so; at one time I did not know where the shots were going, and the men at the butt did not know where the shots were going, because the shooting was so wild; they were firing at a very high angle.

60. Then the shooting did deteriorate with the Snider?—Dreadfully, when the ammunition was so bad.

61. Was it not the same ammunition in respect to charge and description of powder and shape and weight of bullet that was used with the muzzle-loader?—No.

62. Was it not made as the ammunition was made for the muzzle-loader?—No, it had 50 grains less lead, so that you cannot compare the two ammunitions; but it was made up apparently with the same care as the good ammunition for the Snider.

63. What the Committee desire to know is why breech-loading has made any change, or whether it has made any change in the conditions of good shooting—whether the fact of loading at the breech has influenced good shooting?—I think it has been proved by the Snider, that such has not been the case when ammunition is all right.

64. But that arm requires a different sort of ammunition, does it not?—Of course it does.

65. Why should it require that different sort of ammunition, referring to the form of the bullet, not of course to the cartridge case?—In the first place you have done away with windage; the bullet is ·550 in the muzzle-loader, and in the other it is ·573, the bore being ·577 so that you have hardly any windage with the breech-loader; but in doing that, and keeping the same weight, you shorten the bullet, and increase the diameter; of course you have to gain your end in some other way, and you do it by putting wood in and weakening the bullet. There is no doubt that you are driven to do that entirely by maintaining the bore which is too large.

66. Do you think there is nothing in the principle of breech-loading that should in any way cause the shooting to fall off?—I do not think so; we have wonderfully good shooting with the Westley Richards rifle, if the ammunition is all right.

67. Then it is a question of ammunition, in your opinion?—Entirely so.

68. With regard to the strength of the stock, do you consider that a divided stock, as many of the American rifles are made, is sufficiently strong for military purposes?—The stocking all up offers I think a certain protection to the barrel.

69. Yes, but it is divided into two pieces; there is the stock and then the breech mechanism, and then a piece of wood that is fastened below the barrel?—I would rather have it all in one piece, in this way (*describing by a sketch*), unless you strengthened it with iron across here (*describing*), and connected the two, it should be weak across *there*, and if a man clubbed his rifle he would be very likely to break it right in two here (*pointing to the sketch*)—you may make it as strong I think.

70. Do you think it is necessary for a military rifle that the stocking should extend quite up the barrel, or supposing the barrels were made of steel, would there not be sufficient strength for the bayonet without it?—The muzzle of a rifle must always be comparatively weak, and if you fix a bayonet on it you must have a certain strength—it must not be too long unsupported. I think it is better to take the wood pretty near to the muzzle.

71. With regard to the lock of a military rifle, have you seen any of the locks that are made with a spiral spring, which are apparently much more simple in construction than the present lock?—Yes; I think that our present lock is quite obsolete. The machinery costs about six times as much as it ought to cost. I may mention that my armourer made a lock with a simple main spring. I believe that the lock may be much simplified.

72. You have seen locks made with one spiral spring to do the whole work, do you know of any objection to spiral springs?—May I ask whether the spiral spring is to be enclosed?

73. Yes, and therefore protected from the weather.—I cannot conceive that it would be more liable to injury than the main springs, they go very often, and so will spiral springs go.

74. With regard to the repeating rifles, do you consider that they would be applicable for military purposes?—I think that under certain circumstances they would be, such as for the defence of towns. You might I think issue them for that purpose, but I cannot conceive that a repeating rifle could be made a general weapon for the field.

75. Supposing that a repeating rifle was so made that it could be used with its magazine when required, and used as a simple breech-loader on other occasions, what should you say?—I think that it would add very much to the weight; but with regard to repeating rifles, when you consider that you have rifles that will fire 12 rounds a minute, I think that is repeating pretty fast. I saw one with which 17 rounds were fired in a minute, and now by an alteration that has been made they can fire 21, and I think that is repeating pretty fast. I should think that for the defence of a breach it would be very serviceable, in fact it would be nothing more than the old Palafox mode of defence, having lots of rifles placed ready loaded, so as to keep on firing. These things would answer the same purpose to repel an assault, and each garrison naturally would have them; but I cannot fancy your being able to get as strong a rifle in one of these repeaters without its being very heavy.

76. (*Earl Spencer.*) The Committee understand perfectly well the advantages of a low trajectory, but it may be well for you to state generally why you think it of such importance?—It is a question of judging distance, it covers your errors in judging distance, it is our first catch for cavalry or infantry, and we should have to alter our book upon that subject. We try to give the soldier a rough idea of the flight of his bullet, and as well as we can to give him some idea of the curve, but this would bring it all down; but it is of primary importance, a flat trajectory.

77. Very much the same thing would apply, would it not, to the allowance made for the wind?—Of course it would; any man who shoots with a small-bore without wind gauges will see the advantage of getting on the edge of the target, instead of going five or six feet off it. The highest order of training is getting on your target when aiming a long way off it, and it is an enormous advantage.

78. Do you think it is easy to combine penetration to which you attribute great importance, with a low trajectory and accuracy, at long ranges?—Yes; the rifle that would give you good shooting at 1,000 or 1,200 yards would give you better shooting at 500 or 600 yards. I should be disposed to sacrifice accuracy, if necessary, to a low trajectory for the mass.

79. Have you made any trials to ascertain the smashing power of a bullet, using a lighter ball and a heavier charge of powder?—No; I merely made an experiment with a hardened bullet, the Whitworth.

80. You would get, would you not, very high destructive power with a light bullet and a heavy charge?—Yes; it is the velocity as well as the weight; you have got velocity with the 440-grain bullet—you have not perhaps the weight, but you have the momentum the weight multiplied by the velocity—the velocity has a great deal to do with it.

81. I presume you consider that freedom from fouling is an important requirement in a military arm?—Yes; I think that a gun should go on loading and firing with accuracy, or be so good that it should be easy in all its action, easy to load, and to fire with accuracy after much shooting.

82. Do you attribute the absence of fouling a great deal to lubrication?—Yes, and to the way in which the cartridge is made up. I could not give the Committee a stronger instance of the necessity of making the ammunition properly than this, that after all the experiments were made, and those experiments were made before the Committee which established the Snider, after that was made I had ammunition supplied that fouled so badly that we could not shoot a bit; it was some ammunition which had been imperfectly made up, and if you get bad shooting with that excellent ammunition imperfectly made up, what will you get with ammunition imperfectly made up by inexperienced people?

83. I suppose it is not entirely a question of beeswax and tallow?—It is a matter of lubrication of the bullet.

84. You have stated that you have not found the Whitworth rifle fail to any extent, have you seen the report which was laid before Parliament in 1867 on the trial with troops of the rifle?—No, they did not send it to me at all; I never saw it. I only know that trials were made under my eye. I saw the regiments from Shorncliffe come down and shoot, and I fired with my own people with it, to give it every opportunity. The people from Shorncliffe who came to fire were shocking bad shots, but they admitted in the fouling trial, and I think they fired 200 rounds of rapid firing, that it loaded better after the second day than it did at first.

85. Did you receive satisfactory reports from the regiments that were entirely armed with those rifles?—The reports did not come to me, but I found, as far as I could glean them, that the reports were decidedly in favour of the Whitworth rifle.

86. Do you happen to have seen Major Gordon's report from India, on the subject of the Whitworth rifles issued there?—No, I have only heard of it.

87. Should you consider his opinion a good one?—Yes, I consider him a very first-rate man.

88. A successful trial in India would be of considerable importance in your eyes?—Yes, but that a failure should to a certain extent arise was evident.

89. Have you considered the subject of paper and copper-cased cartridges?—Yes, to a certain extent I have. The Committee are aware that there are two great points in favour of paper; the first is the weight and next the facility of manufacture; for example, if you should be shut up anywhere, I think it advisable—and we always used to teach so many men in a company cartridge making, the recruits were taught cartridge making—10 men in a company were taught cartridge making. At Lucknow, when we were shut up there, our ammunition ran out, and we have it on record that Colonel North happened to get hold of a few serjeant instructors, and he produced I think some 70,000 or 80,000 rounds of ammunition; he got the lead, and they made the cartridges, and if you can get paper, or any other material more simple, I think it is an advantage. Then you have the weight to consider. I do not know what the weight is, but it must be something considerable if a man is to carry 90 rounds; our future supply in the field will be about that, not less than that, therefore it is an advantage I think if you can get a simple cartridge, there is no doubt about it the Snider cartridge is a very strong one.

90. I suppose it would keep longer?—I do not know about that. I think that the keeping quality will be exactly in the ratio of the damp that you shut up, if there is any in the powder, which I believe there always is, and you shut that in. Then it is to be proved whether in four or five years, when you come to look at the powder in the paper, you will find it considerably deteriorated. I think it will be. I know that one of the rules of the Committee to which I have referred was that no ammunition would be taken which did not fulfil all the conditions of this Snider cartridge, and that is a very strong cartridge indeed, but because you may be able to put it under water for a week. I do not think, if there are other great advantages in favour of another cartridge, that it should be condemned, because it will not stay under water for a week; it may be just as good for

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all practical purposes if it would stay under water, say, for 12 hours or 24 hours, or, in short, if it would stand a good ducking

91. Would the Westley Richards cartridge fulfil all the requirements?—I do not know the experiments which have been made—I believe the only time that it has been tried was in India and in New Zealand. I asked him to make it stronger, and he has made the case stronger—the paper is a good deal stronger now.

92. Could it not be made up by the soldiers in case of necessity?—I think they might be trained to make it up, you might pick men out of a company who might be taught to make it up, it certainly could be made up; they would want a punch to punch the wad.

93. Could they not also make up the old copper-cased cartridges?—You would have to put in an anvil and it would be very difficult.

94. We have seen some that could be made up and used again?—Yes; but what I mean to say is this, that I do not see the necessity for keeping your ammunition, or making it a *sine quâ non* that it should remain under water for a week, if it is in other respects strong and serviceable. It is something like making a barrel—you might get a barrel strong enough for your purpose, and then you might say it would be better if it was stronger; but if it is strong enough, I do not see that there is any great advantage in having that extra strength. Referring to the cartridge, it is a very beautiful cartridge, but it is very difficult to make up.

95. Do you think that the breech-loader, with respect to the strength of its breech arrangements, should be independent of the case of the cartridge?—I think you must connect it with the cartridge. I cannot fancy any breech-loader that will shut out all the escape of gas without some assistance from the cartridge.

96. In the case of the paper cartridge assistance is given by means of the wad?—Yes, it answers very nearly the same purpose, the wad, and, I suspect, the disc.

97. If there were an escape of gas, which is the case sometimes with a damaged cartridge, would the breech be safe?—It is very difficult to get any breech that would be safe. If you take a Snider cartridge and make it imperfectly, you will blow the breech right up. I think if you can get strength of breech without an escape of gas it is better, and it is an important point.

98. You would not object to seeing a prize given at Wimbledon to be competed for by the army?—I think it is a grand idea. Why should soldiers not go anywhere if the prizes were open? It would do much good.

99. (*Mr. Ross.*) In the trials that were made for fouling, were the rifles fired rapidly?—The firing was from the Whitworth rest, and rapidly from the shoulder.

100. Is it to be expected that a military arm should fire 100 rounds with excessive rapidity, 12 or 14 shots a minute, and the shooting not be deteriorated?—I think you must expect that it would deteriorate.

101. I am speaking of a breech-loader. I presume you would not expect troops to fire 100 rounds with excessive rapidity, say 12 or 14 shots a minute, and the shooting not deteriorate?—Decidedly not, but it is the dose that you give the enemy in a short time, the first six or seven rounds, that does the business.

102. Suppose that 20 rounds were fired from a rifle rapidly, and then 20 rounds taking aim in the ordinary way, alternately, and that 100 or 150 shots were fired in this way, if at the end of that number of shots the shooting did not deteriorate, should you consider that a sufficient test?—Yes, I should think so certainly. There are two things to consider with regard to fouling. For example, there is a fouling which destroys accuracy of shooting, but which does not destroy the loading. I think that with a soldier's weapon you should be able to load rapidly.

103. When you speak of two kinds of bullets, a heavy one for marksmen at long ranges, and a lighter one for the mass of the troops to shoot with a lower trajectory at a shorter distance, do you propose to lighten the bullet by shortening it or by hollowing it? I think you must keep as near as possible to 3 diameters in length or with as little wood as possible.

104. You would hollow the bullet to obtain lightness?—Yes. I do not know that you would have to hollow it very much if you reduced the bore of rifle.

105. It would be the difference between 530 grains and 480?—Yes, but you must recollect that 530 grains are for ·451, and I am supposing that if you reduce the bore a little below that you would not have to shorten the bullet very much for a 440-grain bullet; ·451 is quite the maximum in the present day—we have come to that in 12 years.

106. (*Captain Mackinnon.*) Do you think that the great strength of the present Government cartridge is so necessary that it ought to be kept up, even with a sacrifice of the conditions of good shooting?—I think that it should not be kept up at a sacrifice of any other points, provided that the ammunition stood a fair test; for instance, if you dipped it in water for 12 hours—I think that if it stood in water for 12 hours it would be practically just as good as if it was in water for a week. I should say that any ducking you might give it, putting it into water and taking it out again, and doing that two or three times for two or three days running, is all that you want for practical purposes.

107. (*Captain Rawlins.*) Would it, in your opinion, be advisable to give explosive shells to any of the troops?—I have tried shells with the greatest advantage, even with the Enfield rifle. I am speaking of the Metford shell. We used to explode our tumbrils at 600 yards, and fancy these things used against cavalry; they will explode against anything, against a saddle or against a horse. I think that nothing but shell should be fired under certain circumstances.

108. Do you think it would be applicable to a small bore?—Of course it would, you get the same quantity of explosive material in length instead of breadth; you have just the same quantity of room, only it is longer.

109. (*Chairman.*) If you used a shell instead of having a wooden plug in front, do you think that a shelled bullet would be better than a solid one?—It would be more destructive against cavalry.

110. And more applicable for military purposes?—Yes, because it tears everything to pieces, and makes a tremendous wound.

111. You think there is no objection to shells?—I cannot see the slightest objection; you load and fire as quickly.

112. (*Mr. Ross.*) It would weaken the penetration of the bullet a little, would it not?—Yes, but the tearing property of the explosive material assists, to a certain extent, the penetration.

113. (*Chairman.*) In order to obtain a good rifle, what do you consider to be the groundwork? Should a perfect barrel or perfect ammunition be first procurred, and should the barrel be fitted to the ammunition, or *vice versâ*?—I think it is more difficult to get the ammunition for the barrel than to get the barrel for the ammunition. I think you should have a gun of sufficient strength to stand wear and tear. First of all it must stand very rough usage, then it must have sufficient weight in the breech to stand a charge of powder of about 80 grains, and it should stand that without any violent recoil.

114. Is it not the case that in the present state of invention the ammunition and the barrel present the greater difficulty, and that it is less easy to obtain them than to get good breech mechanism?—I think it is difficult to get good practical mechanism. I altered an Enfield rifle, and took three inches off it, I lightened guard brass and the heel plate, but leaving them perfectly strong. I found that I got my barrel as nearly to 5 lbs. as possible. I put all that I saved into the weight of the barrel, and I got my gun just

of the same weight as the Enfield rifle, the weight of the barrel being 5 lbs. instead of 4 lb. 4 ozs.

115. (*Earl Spencer.*) I suppose the Enfield rifle is often worn out from ill-usage long before the groovings are?—Yes, long before. In India and in the Crimea the damage done to the arms, if they fell down and were trodden upon, was very great, and they were done for, because the iron was so soft. My idea of a barrel is the one that I had made of 5 lbs. weight, and that enabled me to make it a section of a cone outside, and I could put a straight edge on it; but if you put a straight edge on an Enfield rifle you have too great an arch, the metal has been scooped out, it has been taken off, and I think that it should stand the test of a straightedge from breech to muzzle. If you have that scooping out it no doubt lightens the gun.

116. Do you find the recoil of a small-bore rifle too great for the comfort of the soldier?—Not a bit, and I can give you a very strong case with regard to the recoil. The year before last a lad, a mere stripling, a Scotch boy, won the Queen's prize; he was quite a lad, and was firing for the first time in his life 530 grains of lead with 85 grains of powder, and sitting on his heel. I think that answers the question about the recoil being too much for a soldier. All I ask for is 500 grains of lead and 80 grains of powder for picked men—the *élite* of the corps—the old Peninsular bullet was only an ounce.

117. The argument as to the recoil is very often used against the small bore?—Yes, but there is the proof that I have just given you, that a boy, a mere stripling, is able to fire, sitting on his heel, without inconvenience.

118. Do you wish to make any statement to the Committee with regard to the French arm?—I would say this, that the French having adopted a rifle with a very much flatter trajectory than ours, it behoves us not to let them have such a manifest advantage as that—it would be madness in us to do so.

119. What is the bore in the French arm?—I think it is ·441, and I think they fire 85 grains of powder with 400 grains of lead.

120. (*Chairman.*) You consider, all other things being equal, their arms being in other respects equally good with our own, that we should be under a great disadvantage from the cause you have mentioned?—Yes, they would mow you down if you came within 400 or 500 yards of them, on account of the lowness of their trajectory.

121. (*Mr. Ross.*) In order to attain a low trajectory at 400 or 500 yards must you not sacrifice, to a certain extent, accuracy at long ranges?—Yes, possibly to a certain extent, that is to say, you might not get accuracy quite so great at 1,000 yards. I should be inclined to keep up about 3 diameter in length of bullet.

122. (*Earl Spencer.*) Is this correct with regard to the Chassepot, that the bullet is made of 393 grains of lead, and it is fired with 86 grains of powder?—I daresay it is, and, as I have before said they would mow you down.

The witness withdrew.

Mr. Charles William Lancaster examined.

123. (*Chairman.*) I believe you have turned your attention to the subject of military arms?—I have for many years.

124. One of the great requisites for a military arm, we conceive, is a low trajectory and accuracy combined; in order to obtain a low trajectory and accuracy combined, what conditions do you consider to be the most essential?—As limited an area of bore as is consistent with military purposes, and as large a charge of powder as it is possible to use with that limited area of bore. Those are the conditions of a low trajectory.

125. And of accuracy?—Yes, the one follows the other.

126. Although you may, by increasing the initial velocity, get a very low trajectory, yet you may fall off in accuracy, may you not?—I do not conceive that that is possible. I think that in rifle shooting the very fact of having a high velocity, assuming the fact to be so, will also give you, if the other conditions are equal, proper rifling and proper twists, increased accuracy, and certainly a greater per-centage of hits. That, I presume, is the object of this Committee, to get the highest number of hits, in a military point of view, at all given distances.

127. Is it not the case that a comparatively light bullet with a heavy charge of powder will create a low trajectory, whereas a heavier bullet will be better for accuracy at long distances?—There is no question about this, that there are certain limits; it does not do to have a long bullet made very light by means of too extensive an excavation. If the cavity for the powder is so great as to render the bullet too light, you would have very great inaccuracies at very long ranges, although you would have a very high initial velocity at short ranges. If you were to hollow out the ball too much, so as to reduce the specific gravity of it, and made it a light ball, when it had passed a certain number of yards the bullet would rapidly lose a large proportion of its initial velocity, or a greater proportion of it than if the ball had been solid, and therefore of greater density—that is well understood. If you take any object, whatever force you exert, you cannot propel it to long ranges without you have a certain specific gravity, therefore the specific gravity of the ball relatively to its length and diameter would be co-efficient, and they would bear upon one another strictly relatively.

128. What would you consider to be the best weight of bullet?—That would entirely depend upon the calibre; you must first define the calibre.

129. To obtain a low trajectory combined with accuracy, what calibre, in your opinion, would be the best?—As a military weapon, I think that the ·500 or $\frac{1}{2}$-inch bore would be as good as any, either that or the ·450, but that is of little consequence. I think that for all military purposes you could not have a better bore than the ·500.

130. Why is the ·500 better than the ·450?—A slightly larger bore renders it more easily cleaned, and it is less liable to damage in passing a steel ramrod down.

131. I am speaking now with regard to breech-loaders?—Yes, you must clean them out; the smaller the bore practically the greater the difficulty in keeping it clean.

132. That would not apply, I suppose, so much to breech-loaders as to muzzle-loaders?—No; but another question also comes in view, as you diminish the calibre; assuming that you retain a high charge of powder as a condition precedent, you also increase the length of the cartridge, without you adopt something analogous to that which the Americans have been trying with considerable success, that of having the cartridge considerably larger in its posterior portion, in this form (*explaining by a sketch*); of course this is very much exaggerated, but I believe myself, in reference to the question of breech-loading arms, that the very first condition which the Committee should consider and decide is the question of the cartridge.

133. You consider that the foundation?—Yes, absolutely, everything follows on that; first settle the cartridge and decide what is the best cartridge, then 20 men can give you guns to suit that cartridge perfectly, assuming it to be a metallic cartridge, you cannot go from that, first decide upon the cartridge and then the gun. It is the work of Tantalus to make the gun and the cartridge, it assumes endless complications, and has cost this country I may say hundreds of thousands of pounds in the prior consideration of arms, in not settling the cartridge first.

134. Then the cartridge being the most important

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thing, will you be kind enough to state to the Committee what you consider to be the best description of cartridge for breech-loading arms?—My decided impression is that you cannot move from the position of a metallic cartridge, that I believe is a condition absolute for all military arms; whether it may be the very excellent cartridge of Colonel Boxer, or whether it may be a brass cartridge stamped up in one piece, the same as is used by the Americans, is a question for the Committee to try and decide. I think it would be exceedingly difficult to produce a better cartridge than Colonel Boxer's for military purposes, but that is a question which resolves itself into a careful series of trials and deductions. I am not aware of what course the Committee has taken, in reference to the trial of arms or of cartridges, it is merely as a matter of principle that I entertain the strong opinion which I now express to the Committee.

135. Have you seen the cartridges which are now made with compressed powder?—Yes, I have, Colonel Boxer has shown them to me.

136. Have you any opinion to express as to them?—I cannot possibly pronounce an opinion, as I have never seen any trial made; as a matter of convenience the shortening of the cartridge is a great object, but what may be the result of practice with them I cannot say.

137. Would it not to a certain degree obviate one of the difficulties which exist with reference to a smaller bore than the half-inch, namely, that you can get a shorter cartridge by using compressed powder?—That is the object, to get the cartridge as short as possible.

138. If you could shorten the cartridge, is there any objection to ·451 bore?—None whatever, if you can get a short cartridge, and I think the cartridges which I have seen have been limited to 70 grains of powder. I think that I should prefer a larger charge with a small bore; 70 grains of powder even with ·451 bore is not, according to my opinion, a sufficient charge to be used for the model arm, such as ought to be produced by this Government.

139. What do you consider should be the weight of the bullet, and the charge of powder for the ·451 bore?—I think, speaking of course according to the light of my past experience, that the bullet ought to weigh about 500 grains as nearly as possible; 500 grains would make a very nice bullet indeed, assuming it to be a solid one, or a moderate shell-bullet, or an explosive bullet, and in a breech-loading barrel it is decidedly not necessary to have it hollow in the rear; that is to say, in the preparation of the Snider ammunition Colonel Boxer was tied down to hard conditions, he had to obtain a light bullet with a comparatively large bore, therefore he was compelled to have a wood plug in front and in the rear; but with the ·451 bore, or with the ·500 bore, there are no such conditions necessary.

140. Can you produce an expansion without a cavity in the rear?—There is no expansion necessary in a breech-loader, it is all forcing.

141. How do you do away with windage?—By forcing. In the breech-loader you have very important elements in reference to accuracy in shooting. I will assume that these two lines (*explaining by a sketch*) represent the interior of the barrel, irrespective of all question of rifling, and the ·450 bore, and I will assume this (*pointing to the sketch*) to represent the chamber. Now extreme care and nicety are required to ensure good shooting, between the size of this chamber and the size of the barrel, because whatever the diameter of your bore may be, it is upset by the blow of the powder, and is really fitted to the diameter of that chamber; therefore if this chamber (*pointing to the same*) is too large, and you put the ball into the barrel, or force it in with what is technically termed too much slug upon it, the column of lead is too large for the bore; too much is done by the barrel rifling in forcing it through, and one of the consequences is that you get very inaccurate shooting. It is generally attributed to fouling, that is the general impression; but it really in almost every instance is due to the excessive work put on the lead in passing through the barrel, from the ball being made too large in that chamber.

142. Still you consider that, supposing the chamber to be accurately made, forcing is a better principle than expansion?—It is never-failing.

143. Do you lose any initial velocity by forcing, from there being so much more friction?—Not if the proportion of work done is right. You would lose initial velocity if too much work was done, but not if you have the requisite amount of work. What is termed expansion is not really expansion, it is the upsetting of the column of lead when struck by the powder. In an ordinary muzzle-loader it is commonly called expansion, but it really means this, that you take a column of lead and put it in the barrel, and you strike the rear end of that column of lead with the powder at a velocity of so many feet per second—say 1,000 feet per second; that practically amounts to a blow on the rear end of the lead. Now, as lead does not transmit motion very readily, less than any metal, you have actually set the rear end ot that ball in motion before motion has been communicated to the front; and this being still in rest, the pressure of this hinder portion of the ball causes the centre to expand and to swell out and fit the barrel. It is really upsetting; and it is a question between that in the one case, or the forcing of that lead which is first upset into the size of the chamber, and into the barrel. The question resolves itself into this—in one case in a muzzle-loader you upset the bullet directly into the rifle, and in the other you upset the bullet in the chamber, and you introduce it into the rifling. Hence the extreme nicety with which the chamber should be regulated as to the bore and the barrel.

144. Will you state what charge of powder you consider would be the most suitable?—I should feel inclined to use about 85 grains.

145. And the bullet of about 500 grains?—Yes, of course all this would be a matter for careful consideration, but these are about the elements; the Committee will find them as nearly correct as possible.

146. That is with a bore of ·450?—Yes, or ·500.

147. Having fixed the cartridge, what form of barrel do you consider best, and what rifling, and what twist?—I need scarcely mention that I still retain the conviction that the oval bore, which I have for 18 years persistently carried out, will be ultimately the most advisable for military purposes; but, being the inventor of it, I should rather not express an opinion, as it is so strictly a personal matter. I would rather leave it to the Committee's own trials, for I prefer not to speak of what I have done myself.

148. As you have tried it, perhaps you can state what the advantages of it are?—Putting it in that courteous way, if regard is had to the reports made by four or five committees, one after the other, in which the oval bore has constantly and persistently shown superior shooting over all and every kind of rifling, and which the public statistics as to questions of rifling have sufficiently established, I think I may say that there is no question, all things being equal, that the oval bore does give superiority of shooting. The last Special Committee, which sat in 1862, published a series of very elaborate reports, and under every condition of service, with wax lubrication, and the shooting of the oval bore arms at all ranges gave greatly superior shooting—as compared with the Enfield more than 80 per cent., and as compared with the 5-groove rifle from 50 to 60 per cent. better shooting.

149. Have you tried them with the ·451 bore?—That was part of the public trial to which I alluded. The tables are appended to the report, and it will be seen that at all ranges, from 300 yards to 1,200 yards, the oval bore rifles beat consecutively the Enfield, the 5-groove, and the Whitworth rifle, with wax lubrications.

150. The arms were, of course, muzzle-loaders?—Yes.

151. Do you find that the shooting has deteriorated at all since the muzzle-loaders have been converted into breech-loaders?—The official reports state that the first carbines which were converted to the Snider plan for the Royal Corps of Engineers, and sent down to the Select Committee for trial, gave superior shooting, both to the 5-groove and the 3-groove rifles. If I am right, I think that the figure of merit of these arms was made the standard of shooting for other arms of the same calibre.

152. Do you consider that the system of breech-loading at all tends to deteriorate the shooting?—All things being equal, assuming your cartridge is correct, I think the shooting of the breech-loader is quite as good as that of the muzzle-loader.

153. You do not mean that it is so with similar cartridges?—No; everything depends in a breech-loader upon the accuracy of the cartridge, the accuracy of the proportion of the ball, and the accuracy with which the chamber is cut relative to the diameter of the ball. If you have too large a ball in the cartridge, and too large a chamber to receive the bullet, you then put too much work on the rifling, and it is a rather more complicated question. Then with the muzzle-loader you have your rifling, and the ball is expanded, and it has not to fulfil a double duty, first to be expanded into the chamber, and then to enter into the rifling.

154. You think that the steps to be taken to obtain a perfect rifle are first to settle the cartridge, then the barrel, and then the breech mechanism?—Those are the conditions, and if I may repeat them, when once you have settled your cartridge, there are three or four or six plans almost as good as one another as to the mechanical arrangement of the breech-loading; there is very little difference between several modes.

155. Do you prefer a purely leaden bullet or a hardened bullet?—That depends upon what purpose you require it for; is it for penetration?

156. Yes.—If you require great penetration, I am not clear that it is necessary for military arms, but if you require great penetration, then there is a great advantage in having a hardened bullet, but you do it at the price of recoil.

157. Why is there greater recoil from a hardened bullet than from another?—You will see it quite clearly; if you have to force soft lead through the rifling, which you do in a breech-loader, it is on the proposition that the recoil will be measured by the friction between the area of the rifling and the side of the bullet. If you put in a steel ball which is slightly larger than the bore what would be the result? You would have a most tremendous recoil, and you would burst up all the breech-loading arrangement, and very likely burst the barrel.

158. By hardening the bullet you must inevitably increase the recoil; is it not also more difficult to upset the bullet when it is hardened than when it is soft?—It is forcing it through the rifling; there is no upsetting in the breech-loading arrangement; you force it through the rifling, it has to go the length of this chamber first (*explaining*); if it was soft lead it would first expand it into this chamber, if it was hard lead it would enter from that chamber (*explaining*) into the rifling, cutting its way through the rifling, and of course the friction on the inside of the barrel would be in proportion to the metal.

159. As to twist, I believe you have adopted an increasing twist?—Yes.

160. On what principle have you done that?—If you have to start a bullet from a state of rest, and the rifling of the barrel proceeds in a helical direction round the barrel, by starting the bullet at once in this pitch of one turn in 20 inches, suddenly into that one turn in 20 inches, which you would do if it was a regular spiral, you are more likely to have a proportion fail to fill up the rifling than you would have where the rifling starts from a very low proportion of twist—assuming it to start in a straight line, and go on progressively to half a turn, or to start at a quarter of a turn and go on to a whole one.

161. The same reasoning would not apply, I presume, if you forced the bullet, instead of its being expanded?—Yes, it would; but I confess this, that even with a regular spiral you can obtain excellent shooting in either way, so long as you have spiral enough.

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162. With regard to fouling, do you consider that the small-bores foul very much more than the present bore?—The small-bores must always foul under any condition. Assuming that you employ equal charges of powder, of necessity the residuum from the charge must be deposited thicker on a small bore than on a larger area. If you burn a given quantity of gunpowder in a tube of a given diameter, the residuum amounts to so many grains, and if they are spread over a large area it cannot be so thickly deposited as on a small area.

163. You consider that the fouling is not a question solely of ammunition, but that it is a question of bore as well?—Yes, and a question of rifling.

164. Modifications as to powder and modifications as to weights in making up the cartridge would decrease or increase the fouling?—Of course, as you prepare your ammunition, it may be done injudiciously or properly. I assume that you have the best known ammunition, and the best known modes of preparation. My observation merely shows that no matter how a certain number of grains of powder are prepared, they will, under any conditions, deposit so many grains of solid residuum, which attaches itself to the sides of the barrel.

165. Do you consider that with good ammunition properly made up the fouling would be so great in small bores as to deteriorate the shooting greatly?—Not very greatly. My impression is this, that with properly devised ammunition there is no difficulty in having a ·450 bore rifle with regard to the question of fouling.

166. Do you consider that a gun ought to stand being fired say with 100 rounds, so as to heat the gun thoroughly, and yet fire fairly well afterwards?—Yes, certainly.

167. You think it ought not to deteriorate greatly after that in the shooting?—Not after 100 rounds.

168. Ought it with 200 rounds?—It ought to go 200 without seriously deteriorating the shooting of the muzzle-loading arm. With the oval small-bore, after firing 1,000 rounds without cleaning, the shooting was as good as it was the first round.

169. Were those rounds fired with pauses between them, or rapidly?—They were fired in every possible way; very rapidly some days, then they were fired deliberately, but the guns were tried in every possible way, and they kept their shooting up to 1,000 rounds, the muzzle-loader in the last diagram at 1,000 yards was somewhere about two feet.

170. Have you turned your attention to the locks of rifles?—Yes.

171. Do you consider that the present lock is capable of great improvement?—Do you mean in reference to future breech-loading rifles?

172. Yes.—I believe that the lock as it at present stands is obsolete in reference to breech-loaders to be made.

173. In what does its defects consist?—The lock as it at present stands is an accumulation of many devices which were necessary, first of all for the match, and then for the flint lock; then it came to percussion; but if you are to produce a model arm, according to my view, I think that there is no necessity for the employment of the modern lock at all, and that a modification of the spiral spring, as adopted by the Prussians, is preferable, because it is more simple, so much cheaper, and more easily repaired; furthermore, it permits you to give to the closing motion a motion in right lines with the axis of the bore, which I hold to be a very important matter in reference to any new arm.

174. Why is it so important?—Because it is mechanically correct.

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175. And therefore practically good?—Yes, and it is much more simple, the most simple.

176. Do you know of any objections to spiral springs?—None when they are properly made.

177. Will the spiral springs stand sea water or sea air, for instance?—I do not conceive that they would be damaged by sea air, if they were properly prepared, any more than any other wearing portion of the gun.

177*a*. Supposing you damaged a spiral spring by sea water, and it was destroyed or broken, what does it cost you to renew it?—6*d*., and it is the only part about a gun of that kind that can be damaged.

178. Except that the whole store, if damaged by sea air, would be damaged in the same time that one could be damaged?—If you can imagine such a thing as that any one would keep them in sea water all the time, I can imagine that they would be destroyed.

179. With regard to the stocking of rifles, do you consider that there is any objection, on the ground of weakening the rifle, to half stocking it, as the American arms are made; there is a division in the stock?—I should prefer the stock all the way along.

180. For what reason?—I am presuming that the gun is what I should believe to be a model arm, doing away with the ordinary lock; to a gun of this kind I conceive that a whole stock would not be applicable; if you have metal behind it, confining the movement up and down or sideways, it would be impossible to have a very long stock all the way along. In many American arms, such as the Sharp breech-loader, it is not possible, because all the iron work comes in the way.

181. Is the Sharp breech-loader objectionable on account of the stock being divided?—Yes, it is more liable to break here (*describing*) than it would be if the stock were continued along; practically it has been proved by American experience that the Sharp breech-loaders have lasted excessively well in hard warfare, but I do not think that that is such a very great point to be considered.

182. Have you formed any decided opinion as to a metal base, or self-consuming cartridge?—I have seen a good deal of shooting with paper cartridges, both from the Chassepôt and other rifles, and the Prussian, and I believe them to be fatal to the accuracy of the arm as they are prepared. With the Chassepôt cartridge, in the trials which I have made with it, the cup repeatedly sticks on the end of the projection that contains the needle; then, in withdrawing it and reloading, this cup drops into the chamber, and when you insert another cartridge you cannot load without knocking out the whole cartridge.

183. That is not only fatal to accuracy, but is also the cause of missfires?—Yes, and that is owing to the very large size of the chamber that the Chassepôt has, to ensure as nearly as possible the combustion of the paper; the cartridge frequently drops below the centre of the needle point.

184. How do you think a paper cartridge should be made?—I think that the Prussian cartridge is better than the Chassepôt cartridge; they rarely have a missfire with the Prussian cartridge, but it has a longer needle, which is a disadvantage.

185. Is there not also an escape of gas in the rear?—Yes, to some extent there is, but in the new arm that is not so much the case.

186. Still there must be an escape of gas?—Yes, there is, but not to a very serious extent now.

187. With constant firing, would not the continual escape of gas deteriorate the arm?—Yes, with constant firing it would; but if you ask me my opinion as to which is the best, a metallic or a paper cartridge, I should say that a metallic cartridge is by far the best. There is no question, I think, that if you have paper tied over the top of the ball, as in the Chassepôt rifle, you never can hope for accurate shooting, because uncertain quantities of paper will go with the front of the bullet, and act like the tail of a kite.

188. Do you consider it is better to have a bullet with lubrication put on it in cannelures, or to put the paper on the bullet and the lubrication on the paper?—I should decidedly prefer wax lubrication in the cannelures, the same as Colonel Boxer has in his Snider cartridges.

189. Is that because you consider the paper is now and then the cause of inaccurate shooting?—It must be from the tail which I have described now and then. It is not cut through. With regard to the Enfield ammunition, until they had the happy thought of cutting it through at the side, it repeatedly formed a tail. Besides, in the breech-loading cartridges you must have cannelures for the ball, to fix it in the metallic case. I consider that absolutely necessary in metallic cartridges.

190. Do you see any objection to cartridges being made so that they could be refilled again. I am referring to the manufacture of the metallic cartridge; do you think you could get as good shooting out of cartridges that had been refilled?—I think you could get as good shooting, but practically I do not think they would ever be refilled.

191. Do you know anything about repeating arms, or have you seen any good ones?—I have seen the Spencer rifle tried, but it has not engaged my attention much.

192. (*Earl Spencer.*) You have said that you thought it indispensable that the cartridge should first be decided upon before you went into the question of the rifle, and that the country had lost a great deal of money in consequence of the contrary course having been taken?—Yes.

193. Would that apply equally to the question of the bore and the bullet, as well as to the question of a paper or copper cartridge?—Certainly. It is requisite to settle the bore, that is, settle the diameter of the bore with reference to weight, and then settle the charge of powder.

194. Fouling depends to some extent, does it not, on the grooving?—Yes, to some extent; the deeper the grooving the more likely you are to have fouling.

195. Your arm, I believe, is particularly free from the defect of fouling?—It is so reported.

196. Has the relative superiority been kept up in the small-bores upon your system as in the application of it to large-bores?—Yes. If you will refer to the report of the Committee in 1862, you will find special reference made to small-bores, and you will see how constantly at all distances it maintained its superiority.

197. I suppose you consider that facility in manufacture is an important thing with regard to rifling or making barrels?—I think, with reference to facility of manufacture, there is very little appreciable difference.

198. Can your system of rifling be made uniform?—Yes, either with an uniform spiral, or with an increasing spiral, with perfect facility, and it will cost no more than any other kind of rifling.

199. The quality of the arm turned out will be pretty uniform?—Perfectly so.

200. You spoke, I think, of the advantage which the spiral-spring system afforded as to mechanical resistance, I mean as to the recoil?—No; it was in reference to securing the admission of the spiral spring, which gives the effect of a blow upon your cap, and by so much more simple a means than by a lock. It is merely bringing back the spiral spring to a catch, and releasing it. In the ordinary lock you first raise the lever, and the blow is given through a circle. With the spiral spring the power exerted is always in right lines with the object to be struck, and therefore it must be a more mechanical and more simple way of doing it. The fewer the parts which you employ in a gun the better and more simple it is.

201. (*Mr. Ross.*) Do you think that cannelures with lubrication on the bullet itself are more liable to foul than when the bullet has paper on it?—I must first presuppose that it is a condition absolute as to all military ammunition, that it should have a waxed lubricator with it. Then I think it is better to put the wax on the bullet than on the paper.

202. Will you be good enough to state your reasons?—Yes. If you employ wax on the paper of a cartridge for a breech-loading arm, the paper will stick to the

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bullet and produce occasionally wild shots; but there is no difficulty whatever about shooting with wax in the cannelures of the bullet, as long as the slug of the bullet is not so much as to cause a fouling in the rifle.

203. On the principle of forcing the bullets from the chamber into the barrel, I presume it is impossible to have paper upon the bullet, as it would be torn off?—The bullet to a certain extent does partially enter into the barrel, and I apprehend the paper itself would be to a certain extent entered into the barrel; but still to a certain extent the liability would exist of having the paper torn off.

204. In the other case of expanding or upsetting the bullet, the bullet lies completely in the barrel, does it not?—Yes, in the rifling.

205. You can therefore fire a rifle, under the same circumstances, more as if it were a muzzle-loader, upon the upsetting principle?—Yes, if all the rifles are muzzle-loaders and not breech-loaders.

206. I am speaking of a breech-loader; can you not so arrange your rifling that the whole of the bullet shall be in the barrel?—Yes.

207. Do you not more nearly approach to the principle of a muzzle-loader in the case where the bullet is beyond the chamber?—Do you mean without anything to do with the cartridge?

208. The cartridge need not be in the rifling, but that the bullet shall lie there; for example, there (*making a sketch*) is the chamber, and here is the bullet, and might not the bullet lie in the barrel itself?—The rear part of the bullet would be expanded by whatever the chamber is.

209. Might you not do it with a cartridge properly made?—There are some forms in which it could be done. I will endeavour to explain my meaning; this (*making a sketch*) gave very excellent shooting, and I had a paper cartridge; this (*describing the same*) was another bullet with paper round it, and then the plunger came behind it with a closing arrangement something analogous to the Prussian arrangement; you will see by the sketch that the powder is between the two bullets, and the chamber is surrounded there (*pointing to the sketch*); it was fired with a cap underneath, that was 8 or 9 years ago, and when the powder was exploded, this bullet (*pointing to the sketch*) was driven through the barrel, and the rear bullet was upset against that plunger, and when you loaded again you pushed that bullet (*describing*) from A to B into the rifling.

210. Was that altogether paper?—Yes, but it unfailingly cut off the escape of gas.

211. Have you tried the plan of putting a felt wad at the base of the bullet?—Yes, and it helped to clean out the fouling, but it also helped to destroy the shooting.

212. I spoke of a metallic cartridge; is there any reason why you should not have a felt wad in that case?—You could have a felt wadding that would help to clean out the gun. In all sporting cartridges we always put a thin wadding underneath the bullet, and that of course would help to clean the barrel out. But I imagine that the principal difficulty in fouling has been from the little difficulty that occurs as to the diameter of the bullet with reference to the bore, because that rapidly establishes fouling.

213. (*Capt. Mackinnon.*) Have you ascertained whether soft lead or hardened bullets fire the better, and which do you prefer?—They will both fire exceedingly well; there is no perceptible difference in the value of the firing, if they are both accurately made. In the hardened bullet you require a little difference in the diameter as compared with soft lead, and there must be a little difference in the shape of the cannelures upon it; you must put less work upon the ball, and the edges of the cannelures require to be narrower and finer, so as not to have that excessive work to be done that you want where it is of the same shape as the soft leaden bullet.

214. (*Capt. Rawlins.*) Could you determine which was the best cartridge for a breech-loader, by making experiments with a cartridge intended for a muzzle-loader?—No, it is a different proposition altogether.

The witness withdrew.

Colonel Henry St. John Halford examined.

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215. (*Chairman.*) You have given, I believe, for some time very great attention to the subject of rifle shooting, and especially to military arms?—Yes, for about eight years.

216. And you have made many experiments with regard to military weapons?—Yes.

217. Would you agree that besides simplicity, the two chief requisites for military arms are a low trajectory combined if possible with accuracy at long ranges?—Yes, especially a low trajectory. I would sacrifice an extreme for a moderate range to obtain it.

218. To obtain those conditions, what do you think are the principal requisites?—I think you must have a gauge very much approaching to either side of the ·451, the size usually given to small bores. The departure should not be more than, say $\frac{2}{100}$ of an inch.

219. Is that better, in your opinion, than the half-inch gauge?—Yes, because you can use lighter ammunition and still get sufficient power to smash anything.

220. In order to obtain a really excellent weapon, what do you think is the best groundwork to go upon; is it best to fix the ammunition, then your barrel, and then the breech mechanism, or how would you proceed?—I should first of all settle my charge, my ammunition, in so far as weights go; that is to say, weights of powder and weights of lead, because you have to deal with the subject of recoil, with the weight which a soldier can carry and with the blow that you require to give. I think from what we now know we may form a pretty accurate idea of the weight of ammunition that is required; and I should adapt the gauge accordingly; for after all it is not the rifle that produces the final effect, it is the mass that you strike with, the bullet.

221. Supposing the ·451 gauge to be the best, what weight of bullet would you recommend, and what charge of powder?—I should recommend from 450 to 460 grains, for the bullet, and 80 grains of powder.

222. Do you think that with a bullet containing 450 grains you would not only obtain a low trajectory, but accuracy at long ranges?—Yes, you get with a 460 grain bullet a flatter trajectory at 1,000 yards than with a 530 grain bullet with the same charge; that I have proved. I am taking now a 90 grain charge of powder; the terms are hardly alike, but still given a 90 grain charge of powder, you get a flatter trajectory at 1,000 yards with a 460 grain bullet than with a 530 or even 540 grain bullet.

223. Would that hold good with 80 grains of powder?—I think so.

224. Why do you prefer 80 grains to 90 grains?—Because you get a cartridge very long with 90 grains, and you make your ammunition more cumbersome to carry. There is I think too much consideration given to recoil. I do not feel anything of it.

225. You think that the chief objection to 90 grains rather than 80 is the length of the cartridge?—Yes, that is the chief objection.

226. Supposing you could use the other description of powder, say the compressed powder which Colonel Boxer now uses, would there be any objection to using a larger charge?—None whatever, if the 90 grains of that powder are better than the 80 grains of the other; but (I can only give this as second-hand evidence) I do not believe it to be good, I do not think that the result from 90 grains of compressed

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powder will be so good as from 80 grains of ordinary powder.

227. Taking the 450 grain bullet and 80 grains of powder, what shape of bullet would you recommend—hollow?—I most undoubtedly recommend shell.

228. What shell would you use?—Metford's shell because it is the simplest; my opinion is hardly required on this subject. The War Office has not only the records of the experiments with that shell conducted by the Ordnance Select Committee, and they have pronounced it to be by far the best, but have actually adopted it; I have fired some thousands of them, and never had a failure with one.

229. Do you mean that the shell never failed to explode?—Yes, where it had three-quarters of an inch of anything to go through.

230. Do you get equally good shooting with a shell as with a bullet not used as a shell?—Yes, quite.

231. The shell would rather represent a bullet with a wooden plug at the end than a solid bullet?—Yes, it is used at present, in the Boxer cartridge, but I would substitute percussioning for the wooden plug. You do not require a base plug with a small bore, or even with a half-inch; but you require it with a ·577 gauge.

232. For shooting qualities you think that a bullet with a cavity at the fore end is better than a solid bullet?—In a large gauge certainly it is better; in the ·451 it is quite as good. They have the same angle exactly from a ·451 gauge rifle.

233. With the ·451 gauge why is it that there is no plug required at the base?—Because even with a 350 grain bullet the column of lead is sufficiently long to force the powder to upset it.

234. I mean with regard to breech-loaders?—Because I apprehend that you must have a chamber and force the bullet through the barrel.

235. The experiments which you have spoken of before were with the muzzle-loader, were they not?—Some with the muzzle-loader, and some with the breech-loader.

236. Were the experiments with the breech-loader equally as satisfactory as those with the muzzle-loader?—The shooting was not as good.

237. You spoke of the forcing, I think. Do you consider that the proper way of doing away with windage is by forcing rather than by expansion?—No, I do not think, with reference to windage alone that it is the proper way; but you have the question of loading at the breech. If you have no chamber you must, to ensure ease of loading, make your ammunition so loose that you get no good shooting. If you have your ammunition made the proper size for the barrel without the chamber the fouling prevents you from loading; it is a question of loading. At this moment I have a breech-loading rifle, with a beautiful barrel. It shoots magnificently, but not having a chamber you cannot load it for more than three shots without cleaning. I think, therefore that it is necessary to have a chamber for ease of loading, not to stop windage, as that may be done equally well without a chamber.

238. For a military arm you consider that a chamber is absolutely necessary?—I am afraid so.

239. With the rifle you spoke of the bullet is expanded, is it not?—Yes, the bullet lies completely in the rifling. All the cartridge lies in the rifling, and that rifle is perfect in its shooting; but you cannot load it without cleaning. It is utterly useless as a military arm.

240. You consider that for a military breech-loading arm a chamber is essential?—I regret I am forced to believe so.

241. With a chamber, do you think forcing or expansion the better way of getting rid of the windage?—I should use both and have as small a chamber as possible.

242. Therefore the reason that you do not have a cavity at the end of your ·451 bullet is because you adopt the principle of forcing rather than expansion?—The committee have misunderstood me. I should probably use a cavity. If a chamber must be used the bullet will have to be forced, but very careful experiments are required to show how much you must trust to forcing and how much to expansion.

243. What are the objections to forcing?—The heavy strain on the gun and the distortion of the bullet. You first upset the bullet into one shape and then drive it into another. With expansion the bullet lying in the rifling, the first blow of the powder puts it into its proper shape.

244. Does it not tend to diminish the initial velocity, I mean the forcing?—Not much, unless it is overdone.

245. I think you stated that you would recommend Metford shells as one of the ordinary projectiles to be used. Is there much difference in the price?—For large quantities about 1*s.* 6*d.* in the thousand. The Government could make them for that in the arsenal.

246. Do the shells penetrate well?—Yes. The effect of a shell is to make a hole as when a bullet strikes, but when it gets inside it explodes and blows out a place about as big as a man's two fists; the face and sides of the bullet are blown away, but the base travels on with a velocity amply sufficient to kill a second man. Of course it has not so much penetrating power as an ordinary solid bullet, but I think it has quite sufficient penetration. I am speaking now of a cavalry charge or anything of that sort at close quarters. You want to give a shock that will stop a horse. From what I have seen of deer shooting and what happens with a stag, I know that a horse struck by a shell must drop at once.

247. Are not Metford bullets made of hardened metal?—Yes.

248-9. Do you consider there is any objection to hardened bullets?—None whatever, but very great advantages.

250. Will you be kind enough to state what those advantages are?—Hardened metal will at 1,000 yards give an angle at least 15 minutes better than soft lead, and far greater penetration due to its increased power of keeping its shape on impact. This is because there is much less friction, the metal being to a certain extent elastic. Lead, especially soft lead, when it catches hold of anything causes enormous friction.

251. Do hardened bullets tend to wear the grooves out?—I think less than soft lead, on account of their not getting such a hold. For example, I have seen a steel die ruined by two or three bullets being passed through without oil, but it would not have been so with harder metal; the soft lead clings so tenaciously.

252. With regard to rifling, what system do you consider is the best?—I consider Metford's system the best, I think that the rifling, especially the spiral, should be constructed on the same principle as that of his match rifles. Perhaps it would require rather a deeper groove for a military breech-loader.

253. For what reason?—Because in firing a number of rounds, where you get a great deal of fouling, I think that a deeper groove, that is slightly deeper, will probably give in the long run better results, and that a rifle so constructed will hold its shooting longer, but it is a matter for experiment. Metford's grooving is excessively shallow, from $\frac{5}{1000}$ths to $\frac{6}{1000}$ths, and the same depth all the way through.

254. Is his grooving found to stand the test of continued firing?—He has fired out of his own match rifle from 10,000 to 12,000 rounds; he has used it for five years, and it is as good now as on the day it was first turned out. I also have one which is as good as ever it was. Metford's barrel is a steel barrel, but mine is of soft iron.

255. About how many rounds have you fired out of your rifle?—I suppose I have fired 3,000 or 4,000 out of it.

256. Is the Metford principle of rifling that of an increasing twist?—Yes.

257. Do you consider that a proper principle to adopt as to rifles?—Certainly. I believe it is the only true principle, and that any practical engineer will tell you so. I believe that you get rotation on easier

terms than in any other way. You require a final pitch of a certain amount. Whitworth has taken 20 inches, and others have taken different amounts, but I will presume the barrel to be 36 inches long, and you want 20 inches of final pitch. You have to give nearly two complete revolutions in the barrel with an even spiral throughout, but with Metford's spiral you only give about a turn and a quarter, and get the same final pitch, with less friction. Metford's rifling is constructed on the principles laid down for the expansion of gas, and there is an even pressure on the edge of the grooves to give rotation the whole way up the barrel; or in other words that the torsional force applied to the projectile shall be uniform throughout its travel along the bore. Thus he is able to use few and shallow grooves.

258. What do you consider is the best length of barrel in shooting?—I am inclined to think that for a military arm, if a short sword is not objectionable, that I should give a barrel of about three feet.

259. You spoke, I think, of the comparative shooting between a muzzle-loader and a breech-loader; does the shooting, in your opinion, deteriorate from a breech-loader?—The shooting will always be worse where you foul the barrel before the bullet, and the reason why a muzzle-loader shoots better is because you clean it out every time you load it.

260. Could you not clean out the barrel of a breech-loader with a wad?—Yes, to a certain extent, but the fouling from the last discharge remains before the bullet. I should propose a wad containing lubrication, as thin in quality as it is possible to get it, compatible with its durability. I mean with regard to climate.

261. Do you mean lubrication placed upon the wad?—I should say that the wad ought to be charged with the lubrication, and the powder should be defended from it. Again, I should put some sealing between the wad and the bullet, but it must be of a nature not to suck up anything; in other words, it must be oilproofed.

262. Somewhat like the Whitworth mechanical wad?—No; I should put a thin oilproof wad of some kind, made of some fabric, but not metal. The difficulties will, I fear, be insurmountable, because of the searching nature of the oil.

263. I suppose besides putting the lubrication on the wad you would put it also on the bullet?—Yes, I think so.

264. Would it be better to put lubrication on the bullet or on the paper which is put on the bullet?—Paper has many valuable qualities, and I should be loth to part with it. For a breech-loader, we must dispense with paper unless we can obviate its rucking back. You push the bullet into the chamber with the open end of the paper forward, and it probably rucks and causes a jam; but a naked bullet can be easier forced over any small grit that may be in the way.

265. May it not happen that the bullets are so tightly fitted to the cartridge that as the bullet leaves it it tears off the lubrication from the cartridge, being too tightly necked round it?—Yes. I do not think it would be well to make it very tight, although it should be a close even fit. I do not think that a number of cannelures would be necessary.

266. Are cannelures useful only for holding the wax or for determining the flight of a bullet?—Where there is sufficient rotation only to hold the lubrication. I believe them to be a positive harm afterwards, because the moment the bullet has left the rifle they catch the air and cause friction. I believe you will find that a cannelure bullet will have rather a greater initial velocity, but will lose it quicker than a bullet with no cannelures. It does not touch so much of the barrel.

267. I believe you have directed your attention to the subject of cartridges?—I have somewhat.

268. Have you formed any decided opinion as to what system is the best, metal-based cartridges or paper cartridges?—I think the metal cartridges are the best. I think that in a metal cartridge you get resistance to the weather. It is waterproof. Wet does not affect a metal cartridge if it is properly made, but a paper cartridge, however well made it may be, must be affected by wet. I would not cover the metal cartridge with paper.

269. Supposing those difficulties were overcome, do you think, as to principle, that a paper cartridge is applicable to a breech-loader?—I should doubt whether it would be so good. I think you may get the same strength with a much thinner cartridge in brass. It is an object to get the chamber as near to the size of the bore as you can, and it is a great object to have the cartridge no larger in diameter than the bullet if you can avoid it. Moreover the paper being more compressible than brass would allow the bullet to be too much expanded in the explosion.

270. With regard to fouling, do you consider that small bores could be made, so that they would not be greatly injured in their shooting qualities by fouling?—Yes, I think so. I think that fouling can be got over in a great measure. I think that a small-bore will always catch fouling rather more than a large one, because the proportion of surface of barrel to the powder is less; but I think it may be got over by the wad, which should be much larger than the bore. I think it should be squeezed up behind the bullet. The great evil of the chamber is, that as the bullet leaves the cartridge it passes over the space between the end of the brass cartridge and the bore of the barrel, and there is very likely to be an escape of gas, which is very fatal to good shooting. I do not think there is anything much more fatal to accurate shooting than escape of gas by the bullet.

271. Have you given your attention to the locks of guns?—Yes, I have thought over them a good deal, and I think that for a breech-loader the ordinary lock is hardly the right thing.

272. What should you recommend generally?—I think that about the best lock I have seen is the lock of that gun that I got into trouble with; it is something on the window-bolt principle; it is one of the most simple things in the world. There are I think but three pieces in it, and it acts perfectly. I believe that to be as good a lock as could be applied to a breech-loader; it is a centre lock; it draws back straight behind the central fire, and lies down flush with the stock when it is at full cock.

273. It is also a cheaper lock, is it not?—I should think so.

274. It is not a spiral spring lock?—No, it is a very simple lock. I am not now expressing my own opinion only, but I have known one or two good mechanics who have expressed their opinion in its favor, and who think it is as perfect a lock as can be made.

275. Have you at all turned your attention to the subject of repeating rifles?—I do not know much about them. I am not *primâ facie* fond of them, for I think if you fire a number of shots you will not find them quicker than other rifles, and I believe you must use a very short cartridge with them.

276. (*Earl Spencer.*) You have stated that you consider a low trajectory an important thing for a military weapon; do you consider penetration also of considerable importance?—To a certain extent I do. I do not think that you require more than a certain amount of penetration, but I think there are very few rifles which at a short range will not give the required amount of penetration with a charge of 80 grains of powder.

277. Penetration or smashing power?—I would rather take the smashing power than penetration. You may have enormous penetration through flesh with a long heavy bullet running at low speed, but you will not have the same smashing effect that you would have with a light bullet at high speed that stops sooner. I imagine that you do not want to go through a great amount of flesh, but you want to get a certain result. For example, if the whole shock is received in the breast of a horse it will stop him sooner than if the bullet went through him. The theory is

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that the bullet should just *pass* through the body, and no more, that is, that the whole work (foot pounds) should be absorbed in the animal.

278. What is the lightest cartridge that you would recommend, consistently with its having proper smashing power?—A cartridge containing a 450 grain bullet with 80 grains of powder.

279. Comparing the smashing power of a bullet from a small-bore with that from a large bore, such as you have mentioned, what would the difference be?—You will not have the same speed with a large-bore as with a small-bore bullet, because you cannot make the bullet lighter with a large-bore than 480 grains. You lose power very rapidly. The trajectory with the present service ammunition at 600 yards is, I believe, very bad.

280. With the Chassepot rifle they use a bullet of 393 grains and 86 grains of powder. I suppose that would have at a certain range considerable smashing power?—No, it is the worst trajectory of any rifle out, other things being equal, and the least initial speed, which is, I understand, 1,072 feet per second.

281. Would you attribute that to the lightness of the bullet, or to the bad construction of the arm?—Mainly to the bad construction of the arm.

282. With a light bullet and a heavy charge of powder, do you not get great smashing power if the barrel and the grooving are good?—Yes, but I believe the Chassepot loses its power by the chamber at the back for consuming the paper cartridge, by excess of forcing and by compressing their powder. The French are now converting the Chassepot rifle to take a metal cartridge.

283. You do not require a large heavy bullet to obtain smashing power?—Certainly not. I have been using a 350 grain bullet for a sporting rifle with $5\frac{1}{2}$ drachms of powder, and even with a solid bullet the result is something tremendous.

284. Has not velocity something to do with it?—Yes, the effect is obtained by the velocity.

285. You have said something about recoil, but that you were not aware of it personally. I suppose that soldiers not very well trained to the use of the arm would feel the recoil a good deal?—I am told that they do.

286. Have you made any experiments with compressed powder?—I have only heard of it second-hand. Mr. Metford has made some experiments with it, and he told me about it. He said that he had been trying it and that he could not get better results out of 90 grains than out of 80 grains of ordinary powder.

287. It seems important to obtain a clear explanation of the words "forcing" and "expansion." Can you give the Committee a definition?—Expansion takes place always with soft lead. Where you force a bullet it is expanded into whatever space there is round the site of it, and then it is reduced in size by being forced through the barrel like wire drawing, or rather pushing.

288. In the case of the rifle you have described would you apply the term "forcing"?—I have two rifles, and in one forcing is used, and in the other expansion alone.

289. Will you be good enough to describe the difference between the two?—You can scarcely drive a bullet, which requires to be forced, through a barrel with a hammer. A bullet to be rifled by expansion only will slip down through the barrel easily.

290. Might you not combine the two, and arrange for a bullet which could slip down the barrel to be first expanded into the chamber, and then forced afterwards?—I tried that, and I found an enormous escape of gas with a bullet sufficiently small to pass down through the barrel. I tried it in a chambered gun, the bullet lying in the chamber, but the windage was so enormous before the bullet is expanded that the gas rushed by. I am convinced by experiments since made by Mr. Metford that this source of error can be controlled by a more careful proportion of chamber to barrel.

291. It is expanded into the chamber first before it enters the barrel?—Yes; but I think you are asking it to do too much.

292. With the Snider naval rifle what happens with the ammunition used with it?—I have not tried that. My experiments have been carried out by firing into soft sawdust, and getting the bullets out afterwards.

293. If you have the cavity at the base filled with wood or terra cotta, has that any influence in expanding the bullet?—It squeezes out the sides in the large bore; in the small bore it would have no good effect I think. I do not know whether I have made myself clear when I have talked about expanding in the chamber, but what I mean is, that I think you cannot dispense with a chamber, for if you have the bullet small enough to lie in the rifling and yet ensure ease of loading, you will have an escape of gas by it. You should therefore have the chamber large enough to receive easily a bullet, which, with the help of a wad will block the fire, but not so large as to require an excess of forcing.

294. There are various causes of fouling, are there not?—Yes, some rifles catch more fouling than others. I had one cut to a very heavy pitch indeed, 13 inches, on Metford's principle, and that thoroughly showed what was taking place; there was no fouling in the lower part of the rifling where the pitch was light and could bear it, but within a foot of the muzzle the fouling was so great that we could hardly scrape it off. I believe the fire then could not continue to follow the grooves, but made its way across them. The fouling deposited was so great that I could not load at all.

295. Was not that in consequence of the barrel being too long?—No, it was on account of there being too great a pitch in the barrel; and that in a less degree happens with rifles where there is too deep rifling. The fire runs in waves and impinges on the edges of the rifling—the fouling then sets hard.

296. (*Mr. Ross.*) When you speak of too much rifling, do you mean too much twist?—By too much I mean where it is too deep.

297. (*Earl Spencer.*) What is the utmost amount of twist that you can give with safety?—Fifteen inches will do, and 13 inches will not.

298. You would say one in 15?—Yes; but I should give a final pitch to a ·451 gauge of one in about 17 inches, which is anyhow sufficient to ensure steadiness of flight to 1,000 yards, with a bullet of 450 grains.

299. What would cause the fouling with an uniform pitch at the muzzle end of the barrel and not at the breech?—I apprehend from the lubrication being all used up before the bullet reaches the muzzle.

300. Do deep grooves increase the fouling tendency of a gun?—Yes, certainly.

301. In that way the Metford rifle would be valuable?—Yes; the less grooving you have the less fouling there will be.

302. I did not quite understand why you thought the depth of grooving adopted by Metford for his match rifles would not be sufficient for military purposes?—I think you want rather coarser grooving, partly because of wear, and because you do not get such a perfect fit with the bullet in the barrel. The two are balanced beautifully now in the match rifle. The fit of the bullet is perfect, and I think where you have rather coarser materials to work with, it is safer to get a better hold. I say this because I have had barrels rifled from $\frac{4}{1000}$ths to $\frac{10}{1000}$ths on that principle. The barrel cut to $\frac{4}{1000}$ was evidently too shallow in the rifling, and we had to re-cut it, and we found that five, six, and seven thousandths all shot about equally—you could hardly detect any difference between them—but when we came to 10 we began to collect fouling. I should say that seven to eight would be about the thing. I should think that would be the best.

303. You do not think that practically shallow grooves would wear out soon?—No I do not think that they would.

304. In the case of a hardened bullet can you depend upon the bullet taking the twist with certainty?—Perfectly so. I have some excellent samples

of bullets that are rifled not two-tenths of an inch from the base. They have a very weak base, but the bullet is so hard that the powder has power to only just spread it, and for that distance it is rifled, while the rest of it is not touched with the rifling. These bullets shoot beautifully; though they are half stripped by the lands. In fact, I wish to draw the particular attention of the Committee to the fact that both the position of the rifling and the amount of it as given by expansion can be entirely controlled by the shape of base and hardness of metal. I cannot, while referring to this branch of the subject, feel satisfied unless I observe that perhaps, especially on this question of hardened lead and the governing of its expansion, I have availed myself of the exhaustive experiments of Mr. Metford, to whom we are no doubt indebted for the present expanding hardened match bullet.

305. Have you had any experience of the Lancaster system of rifling?—I have had a little.

306. What do you think of that system?—I think it is the worst system out for everything but fouling, and for this reason, that in giving your rotating force you are acting by two surfaces very oblique to the radial line of the bore grinding against one another, instead of applying the rotating power by the edge of the rifling. I think the rifling should be approaching a radial from the axis of the barrels, as by that means you get a clean hold on the edge; but if you take the two surfaces as he does, and attain your end by their pressing against one another, you cause enormous friction in the barrel. I think Whitworth's invention is open to same objection, but by no means in the same degree. For the matter of fouling this last is very bad, whereas Lancaster's is good.

307. In that way do you suppose that you lose velocity?—Yes, enormously.

308. What bore, upon Lancaster's system, have you tried?—I have tried the small-bore with the ·451 gauge.

309. And as it got smaller I suppose the objection would be greater?—Yes, Mr. Lancaster has beaten the Enfield with his ·577 gauge rifle, but that was due to his having adopted a much quicker spiral in his rifles.

310. Do you think his rifle would be likely to beat the Whitworth?—Do you mean one of Whitworth's small-bore rifles?

311. Yes.—I should prefer the Whitworth even with cylindrical bullets to the Lancaster, provided I was allowed to keep the Whitworth clean.

312. Have you ever seen the Lancaster match rifle?—Not the short stocked. I have seen the long stocked match rifles, and I used to get wild shots out of them very often.

313. Have you paid much attention to the different kinds of lubrication used?—Yes.

314. Which in your opinion is the best?—The best lubrication is oil.

315. Do you think that that can be applied to a military weapon?—I hope so. I should try to use it in the wad. If paper is done away with, my idea is to have two kinds of lubrication, one in a single cannelure and the other behind the bullet in a wad. I think it is hardly fair to send a naked bullet through the barrel with the lubrication only behind it.

316. How would you put the oil into a cartridge?—I should saturate the wad with it, and I should put on both sides of the wad some substance, not india-rubber, that would not suck it up, and defend both the powder and the lead from it. I think it may be sealed in its place in the cartridge, say thus: Having put in the powder, place next a tight-fitting disc of shellaced paper or thin card. Then, with a brush sweep round the joints as well as the surface of the brass with shellac varnish. Leave this to dry. Then push down a thin hard wad saturated with oil of a high quality. Clear off any oil left on the sides of the case, and place another such card disc over the wad. Sweep round again with shellac, and after drying insert the bullet. Whether some such system as this can be carried out in a large manufacture is the point.

317. Do you think tallow grease entirely bad?—I think it is very objectionable, because it corrodes the bullet, and in a cold climate like Canada gets hard and flakes, while in a hot climate it melts; whereas if you use oil and defend it you may keep it, and it can get neither better nor worse.

318. What is your opinion about a lubrication of pure beeswax?—It would do, I think, in a hot climate, but not in a cold one; it is not sufficiently lubricating. I do not think it is suited for this climate. If you were firing quick and got your gun hot it would do very well, but not otherwise. In a cold climate I do not suppose you would ever get the gun hot enough to make the beeswax act well.

319. Do you entertain a strong objection to the principle of a sliding bolt?—Yes, a very strong objection.

320. Will you state the reason why?—I think that whenever you put pressure, as you may have to do, on a cartridge to get it in, and that pressure is directly in the line of fire, accidents must happen. I believe that Major Fosbery's gun is also dangerous on that account. I think the only safe principle is that of either the Snider or the Henry, or some such form where you come across the end of the cartridge and not up to it.

321. You do not think it is sufficient if the cap is countersunk?—No; I think you are putting a very heavy pressure on the powder from the bullet end, and with a faulty construction of the cartridge, or a weak one, I think you may get into trouble.

322. Perhaps not on ordinary occasions, but when the shooter becomes excited?—Yes, as he would become on service.

323. Have you tried any experiments with Major Fosbery's invention?—No, I have not.

324. Your experience is probably derived from the accident which happened to you at Wimbledon?—Yes. I have thought a great deal about it since, and I have come to the conclusion, after what occurred, that when pressure is put on a cartridge with any hard surface it is dangerous. The cartridge ought to be pushed in by the hand.

325. Do you believe that that was the cause of the accident which occurred at Wimbledon?—Yes, quite so.

326. Have you at all considered the spiral spring action of a lock?—Yes, and I do not like it. I do not think such springs are likely to stand wear.

327. For what reason?—Because my impression is that they are more difficult to manufacture at present, and spiral springs have certainly been found to cripple sooner than others.

328. Do you mean in experiments with guns?—Yes. I have a shot gun with spiral springs for the pistons, and for one or two other things I have had spiral springs, and I know they are apt to cripple; they are harder in fact to make.

329. Would you prefer a loose piston to a piston with a spiral spring?—Yes, if it could be got, certainly.

330. (*Mr. Ross.*) Do you think that your objection to a breech-loader on the sliding-bolt principle would hold good if it was impossible for the piston to remain out after firing?—Yes. I do not think it need happen with the piston alone. I think that you are putting tremendous end-on pressure upon the cartridge. The cap is very close to the seat of the blow at one end, and they are making caps of a very delicate kind now.

331. How did the accident happen which has been referred to?—It happened, I believe, from the pushing one of those bolt-guns up with a run and from the cartridge sticking. In that particular instance I think it happened from the piston being driven in with force, by the wrist. It should be recollected that in the gun in question, the other end of the piston was exposed.

332. You spoke just now of occasional wild shots from the Lancaster rifle, has not that happened with other rifles?—Yes, with the Henry and others, but how far this may be due to the faulty ammunition, I am hardly prepared to state.

333. How would you accoun for those occasional wild shots?—I believe they are very much owing to fouling in the barrel, that checks the bullet, or from

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fire getting past the bullet, this is about the worst thing that can happen. When the fire is not blocked the bullet is canted as it leaves the muzzle. I believe that error takes place at the muzzle in 99 cases out of 100. If you find a rifle that will shoot perfectly at 12 yards, given other qualities, that is, sufficient spiral and sufficient weight of bullet, it will shoot at a long range. I have found with match rifles that I could pick a rifle from shooting at 12 yards. The error shows itself distinctly at that distance. You may diagram it out, and you will find that the error of the Enfield rifle at 12 yards is about in the same proportion to its error at 300 yards.

334. I suppose that wild shots may be sometimes accounted for by the paper round the bullet adhering to it after it leaves the barrel?—Yes.

335. With an increasing twist, such as Metford adopts, I suppose a hardened bullet is necessary?—It will make much finer shooting.

336. Can you obtain good results from a soft leaden bullet with an increased twist?—Yes.

337. Would you adopt the same form of rifling and the same amount of twist in the half-inch bore as in the ·451 bore?—No.

338. What alteration should you be inclined to make?—You must take the proportions. First settle the extreme range at which you require accuracy, then presuming that you have the proper amount of rotation settled for one gauge you can take them out for the other by proportion; I think I may put it in this way: That to give two bullets of like proportions, but of different diameters proportional stabilities, you will require to give the surface of each the same velocities of rotation. I assume that the specific gravity of the two bullets is the same.

339. What are the main advantages of the ·451 bore over the present Government bore?—You can use lighter ammunition with a much lower trajectory, and with far greater accuracy. At all ranges you will have greater smashing power, on account of the superior velocity.

340. Do you think that in a proportionate degree the ·451 bore has the same advantages over the half-inch?—Yes. I think I should almost go below ·451 if I had to choose rather than above it. I think it is about as good a gauge as you can get. As an example of what takes place I have a rifle of ·380, which is about 112 gauge, and with a bullet of 150 grains and two and a half drachms of powder the smash is something astounding at 200 yards.

341. (*Captain Machinnon.*) Is there any particular proportion as between the diameter and the length of the solid bullet, which gives the best shooting?—Yes, I think that the steadiest shooting at long range is got out of the 530 grain bullet and a 460 gauge barrel; but it requires 90 grains of powder. I do not think that the 530 grain bullet is the best bullet for military purposes.

342. (*Captain Rawlins.*) You were speaking of the advantages of the small bore over the present service bore; are there no counter disadvantages, or are there any advantages which the large-bore has over the small one?—I cannot see that there are any, except the fouling.

343. Might not two sorts of ammunition be fired out of the same gun, one for long and the other for short ranges?—No. I think you would get into difficulties there. You would want a different sighting in that case, and I think that that would be a great disadvantage. I do not think you will get any advantage by having the heavier bullet for long range, as you get a flatter trajectory at 1,000 yards with the lighter bullet, but lighter bullets in stormy weather do not hold their own so well as heavier bullets; but I do not think there are sufficient advantages in the heavier bullet to counterbalance the advantages which the lighter bullet has. Then, again, you must remember this, that you have a different shape of cartridge, and the gun that is chambered for one will not do for both.

344. (*Mr. Ross.*) Might you not have the same form of bullet outside but hollowed inside, so as to give lightness to it, but its length and circumference still remaining the same?—Yes, you might do that by making the heavier bullet solid, and thereby sacrificing the advantage of using shell. I do not see at all what you would gain by a heavier bullet.

345. (*Captain Mackinnon.*) Are you now speaking of the 450 grain bullet?—Yes.

346. (*Captain Rawlins.*) Might you not have one that would do for 500 yards, and another that would give great accuracy at 1,000 yards?—I think it is not advisable to have two sorts of ammunition.

347. With regard to shells, would you be inclined to substitute an explosive shell for the ordinary bullet?—Certainly; I would use it entirely. It does perfectly well at the targets, and there is no more danger in it than in a solid bullet.

348. Would there not be more danger if it were kept in store?—Not a bit; you may put one of Metford's shells into an empty rifle, and take an iron ramrod and bounce it down until you bounce the ramrod out, but it will not let it off. A 6 lb. hammer will only just let them off if it falls on to them, but the speed gives the blow necessary to explode them; they take from half to three-quarters of an inch of flesh to let them off.

349. They would be applicable to small-bores?—Yes, or for any kind. I have used them for both.

350. (*Chairman.*) Have you used them for small-bores, and are they just as good?—Yes, and weight for weight they require the same angle of elevation as solid shot.

351. (*Captain Rawlins.*) Is it your opinion that the shell has no disadvantage whatever?—Yes, it has none whatever. I have a very strong feeling about the shell. I am almost certain that the French will have these shells at once, and I believe that no troops can stand against them; the moral effect produced is, I am told, fearful. They have been tried in a small way in India. I apprehend that what you want to do is to demoralize the enemy's troops.

352. In the case of a shell striking the body of a man, is it certain that it would explode in him and not go through him and explode afterwards?—Yes, it will explode to a certainty in him; it takes only three-quarters of an inch of meat to do it; I mean that extent of penetration. The base of the shell would pass through him unless stopped by bone, and kill a man beyond.

353. (*Earl Spencer.*) What do you think would be its effect on a rabbit?—That you would have considerable difficulty in finding any of the rabbit.

354. You believe that it would always explode to a certainty?—Yes.

355. (*Captain Rawlins.*) Supposing you fired it at several $\frac{1}{2}$-inch planks, would it explode, do you think, in the first or the second plank?—They go at times through a $\frac{1}{2}$-inch plank without exploding, but in a $\frac{3}{4}$-inch plank they never fail to explode, and they explode in this way: the edge of the lead punches out a plug of the material through which it passes, and if that plug is not of sufficient weight of itself to explode the shell it carries it on without doing it, but we find that anything three-quarters of an inch thick, even of the softest deal, will explode these shells. Then there is another great advantage which I can point out, and that is in getting your range. You can see where the shell explodes; you know where the bullet hits, and very few shots will tell you whether you are firing short of or over the mark. I consider that for the purpose of judging distance they are invaluable.

356. (*Chairman.*) During sieges they would not be so applicable perhaps for penetrating gabions or fascines?—No. I do not think they would go so far through them, though they would shake them to pieces much more.

357. Or through mantlets?—No, they will not penetrate so deeply.

358. I think you have stated that the initial velocity of the Lancaster rifle is much less than that of the Metford?—Yes.

359. Have you ascertained that by experiments?—Yes. It is some years since I had to do with it, but I ascertained the angles of the Lancaster rifle then, and I compared them with the Whitworth. I compared these again with the Metford. The angle of the Whitworth is about 10 minutes better than the Lancaster, with the same charge, at 1,000 yards. Again the angle of the Metford is about 10 minutes better than that of the Whitworth.

360. Were your experiments carried on at different times?—Yes; and they were carried over a number of shots quite sufficient to exhaust all the difficulties arising from weather.

361. Do you think that all the circumstances were similar?—Yes, as regards weather.

362. With regard to lubrication, do you think that beeswax is less adapted for the lubrication of the ·451 bore than for the ·577 bore?—I think it is, because the proportion of the diameter of the barrel which must be taken up by the beeswax in a large-bore is less than in a small-bore. You give in both the same thickness of lubrication, but if you put it into a small bore you take up a greater proportion between the bullet and the barrel than in the large bore.

363. You appear to object to spiral springs, but did you ever try the ribbon springs?—No, but I have been told by a mechanic that they are as bad.

364. Do you consider that oil will stand in cold climates?—I believe it will stand better than anything.

365. Have any experiments been tried with it?—I do not know that they have, but I know the effect that cold has on oil. I have had it nearly frozen, and if it were frozen hard of course it would be less capable of doing its work, but then it would be incomparably better than beeswax, because beeswax becomes solid at a much higher temperature than oil. I believe you cannot have your lubrication too fine. You are using under the best circumstances a very small quantity of lubrication to lubricate a very great surface of metal; it is impracticable to use a larger quantity.

366. (*Earl Spencer.*) You have stated some curious facts about the fire from the explosion outrunning the bullet, have you made any experiments which enable you to tell us anything more about that?—I have made very many experiments, and I find that unless you completely block the fire you get wild shooting.

367. Can you give the Committee the results of any of your experiments?—Firing into sawdust I found the bullets to be scored up the sides by fire when they had been too small for the barrel, or when the wads had been imperfect by being either too small or not sufficiently stiff. I also made some experiments with the Westley Richards rifle, a chambered breech-loader. I wanted to get a different shape of bullet to that he uses for the purpose of improving the shooting. I therefore had different shaped bullets made for me according to their sizes. I found them cut by the fire. The block which ought to be used not being behind them. Then I tried another breech-loader, having a barrel without a chamber, and using a cartridge that was made up without a wad between the powder and the bullet, with lubrication simply on the paper, but the bullet became so cut with the fire that it did no good; and it was some two years before we overcame the difficulty by putting a wad into the cartridge. It was at last done by filling up the cavity in the rear with blotting paper and placing a very large wad crumpled up into the shape of a mushroom, between the bullet and the powder, and this wad being prevented by the blotting paper from entering the cavity, filled up the space by the sides of the bullet, between it and the barrel. You must have a wad, a convex wad in fact, much larger than the barrel, which as it leaves the cartridge opens out like an umbrella.

368. What did you find to be the effect upon the bullet when it had the scored marks upon it?—It was cut in three or four places up the length of the bullet, and the surface of the lead was actually melted.

369. (*Mr. Ross.*) With regard to the size of a wound made by a solid bullet, do you consider that the size of the wound depends upon the velocity and weight of the shot more than upon its diameter?—Velocity, not diameter. I consider that velocity will produce more effect than any additional weight or diameter that could be practically used in a small arm. You cannot get high velocity with a heavy shot without a great increase in the charge of powder.

370. Do you think that a larger wound would be made with a small-bore bullet at great velocity than with a larger bore and less velocity?—Far greater.

371. (*Earl Spencer.*) Why do you dislike the Whitworth system of rifling?—Because I believe it is peculiarly inapplicable to breech-loaders from the excessive depth of the grooving. I think there is a waste of power in giving rotation. The rifle fouls extremely and there is very great friction.

372. Do you get more wild shots out of the Whitworth than out of the Metford?—Certainly. With *cylindrical* bullets the escape of fire causes very wild shooting.

373. Have you fired many shots out of the Metford rifle without cleaning it?—I have fired sometimes 100 shots at a time without cleaning at all, and then I have simply put in a piece of cloth with the ramrod and taken it out and fired again. I never clean a Metford rifle with water.

374. Does the accuracy of firing not deteriorate with that rifle?—Not in the least, that is, not with the muzzle-loader.

375. What is the difference between the Metford rifling and the Rigby rifling?—The cut is very much the same, but Rigby has used nine grooves instead of five, because I suppose he is afraid of stripping, and there is more tendency to strip with an even pitch of rifling. Half the initial velocity is given to the bullet in the first three inches from the powder, and Metford starts with a low pitch of rifling, increasing the spiral until he attains at the muzzle the rotation he thinks desirable according to the law I have already stated. The stripping intention is reduced to a minimum, as fewer grooves and lighter rifling are required. There is less friction and a greater initial velocity is the result. In point of manufacture and for lasting, the fewer the grooves the better. The great thing in the manufacture is to leave as much of the old cylinder as possible in the rifle. You can only test the barrel as to its being straight and parallel before it is rifled, and if you cut nearly all that away you cut away the foundation of truth; every cut that you put in is more liable to make a waster barrel, and so spoil the barrel in manufacture. There is no more difficulty in rifling a Metford than any other shape. The Lancaster is the most difficult.

376. You prefer Metford's rifling to Rigby's?—Yes. I believe that the Rigby rifle will shoot very well, but this has been attained by Rigby having adopted Metford's cut of groove and Metford's bullet.

377. Is there any other system besides those we have mentioned, the Enfield, the naval, the ordinary, the Lancaster, the Whitworth, the Henry, the Metford, the Rigby, and the Westley Richards, that you think worthy of any attention?—The Westley Richards and Whitworth are practically the same; I do not think there is any other. The Turner rifle is of no use at all, it is very faulty; and the Henry, has in my opinion grave faults in its system of rifling.

378. (*Mr. Ross.*) What are your reasons for objecting to the rifling adopted by Henry?—He has so many angles that it is more liable to foul. Henry's rifle would be far better if he left out one of his angles; in each cut the one on the reverse side of the driving edge (*explaining by a sketch*); supposing that this is the driving edge, what does he want with the angle on the reverse side? If he filled that up his rifle would be better.

379. Have you tried any experiments in firing with the Henry and the Metford rifles?—Yes; and I have found that the Henry will only shoot in wet weather, when the fouling gets very slobby indeed; directly you came to any difficulties arising from the weather the Henry throws wild shots.

380. Have you had more experience of fouling with

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muzzle-loaders than with breech-loaders?—I have had a good deal of experience with both.

381. Have you fired rapidly?—Yes, I have fired rapidly, and I have found every breechloader fail from fouling.

382. (*Chairman.*) Will the Metford rifle fired in the same way fire well?—I have not tried it on the same terms with a chambered gun. I have tried the Henry and the Westley Richards, but I have not tried the Metford on the same terms.

383. (*Mr. Ross.*) Do you think it is more trying to an arm to fire out of it a certain number of shots with great rapidity, than the same number of shots slowly?—Yes, it is much more trying.

384. Are the Metford grooves cut square or circular?—They are cut a little circular.

385. (*Earl Spencer.*) If you were about to direct your attention to finding the best breech-loader, would you first decide on the cartridge including the weight of the bullet, and then find a barrel and bore for it, or would you first begin with the barrel and the bore, and then find a cartridge to suit them?—I should take the cartridge first—that is to say, the powder and the lead. I do not refer merely to the shape and internal manufacture of the cartridge, because I think that a number of experiments are required to be made to ascertain the best way of blocking fire behind in the cartridge, and also the best way of applying the lubrication.

386. (*Chairman.*) Powder, lead, and length?—Yes; the powder and lead would give the length.

387. (*Earl Spencer.*) You would probably select two or three principles of construction, and subject them to different tests?—Yes, and I think I am not mistaken in the direction in which success is to be found.

388. You do not perhaps think it is yet decided which principle of rifling the bore would be the best for a military weapon?—I think some small latitude may be allowed to the bore. Having settled the bore, and from that the final pitch of rifling, I should determine the depth of the grooves by experiment. I should adhere strictly to Metford's principles of rifling as they are founded on correct laws proved to be correct by practice, and they are equally applicable to great guns or small arms.

389. You do not think that the breech mechanism would very much affect the shooting?—No.

390. (*Mr. Ross.*) Do you approve of bullets with an enlarged ring round the base such as Westley Richards uses?—I do not like them.

391. With bullets so made, I suppose the whole of the bullet lies in the rifling?—The nose of his bullet only enters the rifling. He uses a large chamber, a bullet ·458 in the body with a rim ·470 in diameter, four thicknesses of paper ·008, making in all ·478, and this has to be driven through a ·451 barrel.

The witness withdrew.

Mr. A. Henry.

Mr. Alexander Henry examined.

392. (*Chairman.*) You have had a great deal of practical experience in the manufacture of rifles?—Yes.

393. Have you directed your attention at all to the manufacture of good military rifles?—Yes.

394. The Committee have had your rifle before them, but in the course of the competition have you gained any experience that has enabled you to improve your rifle?—Yes, very much indeed. The question of ammunition is a most important matter. I can improve that very considerably, and, yesterday and the day before I was trying experiments with some that I shall show you. I find it is possible to make considerable improvement. I have made trials with four different kinds of ammunition. One has a thick wax wad, and no lubrication on the bullet, just like a muzzle-loading bullet, with nothing upon it but the paper wrapper. The other has a compound wad of thin felt above the powder, and then a very fine ebonite wad, of which this is a specimen (*producing the same*); it is cut out of this (*producing the material*); it has very great cleaning power, that is to say, it is hard and keeps a good edge to clean away everything before it, and at the same time there is scarcely any friction in the barrel, it goes above the felt wad, and then the wax wad goes above that again, touching the bullet.

395. (*Mr. Ross.*) I suppose the ebonite wad is waterproof?—Yes, perfectly so. There are some here that I fired the day before yesterday, and you will find them very perfect (*producing the same*); these fell on the ground close before the muzzle of the rifle, taking the bottom of the wrapper with them.

396. Have you made sufficient experiments with these different kinds of cartridges to be able to determine which is the best?—I think it would be premature to come to a conclusion about it at present; I have been only twice out since Friday last. I fired some yesterday and the day before. I fired over 200 yesterday, trying if I could foul the rifle, but I found that these wads prevented it completely, so much so that the shooting was as good at the end as it was at the beginning.

397. Did you make any wild shots?—No. I will show you the diagrams.

398. You have made three or four experiments, I believe?—Yes, and these are the diagrams that were made the day before yesterday at 400 yards (*handing in the same*). The Committee will find that the vertical deviation is very small, and the lateral deviation is entirely in consequence of the wind. The other experiment that I made was with a compound bullet, which I have here to show (*producing the same*); the fourth was with a taper bullet, with a wax wad and an ebonite wad along with it, with no other wad, but simply those two. This is the compound bullet (*producing the same*).

399. (*Chairman.*) That, as I understand, is made of two different metals?—Yes. I have tried them with wax and without. These (*explaining*) are compressed in three pieces with a wad in the centre, that can be put at the base or near the apex.

400. (*Mr. Ross.*) What is this ring round the bullet?—That is the felt wad which is inserted and made solid with the bullet, and it cleans away everything before it. This (*pointing to the same*) is one without wax, of the same description. I find that the wax keeps the rifle rather cleaner than the lubrication I have employed, and which I am sorry I did not know sooner. This (*pointing to the same*) is one with the ebonite in front of the felt.

401. (*Chairman.*) Would not that sort of bullet be very much more expensive?—Not much; it is just as simple to make as the present Enfield bullet. After the present Enfield bullet is made they have to send it round a disc to get the plug put in, and this is just as soon put in as it. These are another sort of wads (*producing the same*) that I have used with wax and ebonite placed in the cartridge immediately below the bullet, and each of these four descriptions have given very excellent results. These are the diagrams (*handing in the same*) showing the accurate shooting that we made while a gale was blowing, which of course accounts for the lateral deviation; the fouling was very slight. I fouled the rifle by firing over 100 rounds with the old ammunition. I then put in one of these ebonite wads with a wax wad, and that removed the fouling at the second shot. I was then ready to go on for accuracy. I also tried a thick wax wad after fouling, and that did pretty well, but did not act quite so well as the ebonite and wax combined; but it is a very great improvement. Veneer or satin wood or box wood would do the same thing as ebonite.

402. Do you think it is a good plan to put paper round the bullet?—For a small-bore rifle I think it is,

because I am sure it gives greater accuracy, and prevents the lead getting on the barrel so much. With a small-bore rifle the friction is much greater from the bullet being more elongated than in the case of the large-bore. Even with the large-bore, without a great amount of lubrication on the bullet, it will leave a little lead in the barrel.

403. Would not that be prevented by using a bullet made of hardened metal?—Yes, and I am using it; this (*producing the same*) is a bullet that I prefer after being hardened to the extent of about 1 in 10; that has sufficient taper.

404. But you still require paper with a hardened bullet, do you not?—Yes, I think it is better to have the paper; the taper in the length of this is about one-hundredth of an inch.

405. Supposing you were about to make a new rifle, do you think twould be advisable first to make the barrel, and then contrive the ammunition to fit it; or have the ammunition first made, and then make a barrel to fit the ammunition. In the case of the breech-loader which is of the first importance, the ammunition or the barrel?—I consider them both of equal importance. I should think for accuracy to be maintained up to 1,000 yards the bore should not be less than ·447 and the bullet with the wrapper ·451 at the base,* because that gives $\frac{4}{1000}$ths of an inch for the base of the bullet to be larger than the bore. I consider ·447 is the *minimum* and ·457 the *maximum* of the bore, and the rifle ought to give good shooting at 1,000 yards with a 480 grain bullet. The fire from a 530 grain bullet would give a flatter trajectory at the end of its journey.

406. But not so flat as in the first 300 yards?—No.

407. With regard to getting a low trajectory and also accuracy at long ranges, what weight of bullet should you recommend?—I do not think that anything can beat 480 grains, to get as near as possible the medium of both.

408. Would it be possible, do you think, to make a gun to carry the lighter ammunition as well as the heavier; a good gun that would carry both?—Not for 1,000 yards.

409. I mean to carry light ammunition to fire at short ranges with a low trajectory and heavy ammunition to obtain greater accuracy?—I think it would be perfectly easy.

410. Do you not think it would affect the chambering of the gun by using a lighter bullet and a greater charge of powder?—If you made up the deficiency with powder the cartridge would still be of the same length. If you wished to make a very flat trajectory you would increase the powder and decrease the weight of the bullet.

411. For 1,000 yards would you diminish the powder and increase the weight of the bullet?—Yes.

412. Would you not in that way injure the shooting?—No; but you could not put so much powder into a cartridge with a 530 grain bullet as for a lighter one, because the strain would be too great on the cartridge—it would fracture the cartridge or the cap, and cause an escape of gas; 85 grains are as much as you can put in, but if you put a lighter bullet you can increase the charge without straining the cartridge any more than with a bullet of the full weight.

413. Do you still approve of your system of rifling?—Yes, with two more cuts; instead of seven I should put nine. That would reduce the angles, and still give great rotatory power, and cause the wad to keep the lands cleaner than with seven cuts.

414. Do you recommend that from theory?—No, from practice. I have made a couple of them muzzle loaders, but still the principle holds good in both muzzle and breech-loaders.

415. Do you think the same conditions would hold good with breech-loaders as with muzzle-loaders?—Yes. I think it is of more importance for breech-loaders, because loading at the muzzle with a lubricating wad always clears the way for the bullet, and allows it to come out of a clean barrel. In the other case (that is the breech-loader), from the effects of the discharge of powder which the bullet has to travel over, it is of more importance that the angles be reduced.

416. Have you tried any experiments with compressed powder?—No, I have not. I went to Colonel Boxer to ask him for some of his ·500 gauges, not that I think they will ever take the place of the ·450 gauges.*

417. What do you conceive to be the objection to compressed powder?—I really should not venture to give any opinion about it, because I have not tried it; but what I felt disposed to do was to try some of Ely's cartridges, the ·500 cartridges, against Colonel Boxer's compressed cartridges and against what I am making, viz., the ·450 gauge.

418. But you know nothing about cartridges made of compressed powder?—No, I can give no opinion about them.

419. I see that you use a solid bullet?—Yes.

420. How do you obtain its expansion into the barrel?—Any plug of lead will expand in a tube if it is of that length (*describing*), the length of the 480 grain bullet, or of the 530 grain bullet.

421. Are your bullets forced into the barrel, or are they actually larger than the barrel?—No, they would pass into the barrel with a little pressure, but the ignition of the charge causes the expansion; when the bullet receives, as it were, a blow at the base, it causes the expansion of the missile, and then it fits the barrel perfectly.

422. Do you consider that it is better not to force the bullet into the barrel?—Decidedly.†

423. Upon what grounds do you entertain that opinion?—Because, from the pressure of the gas, the expansion and friction would be too great.

424. Would you not have increased friction from adding to the angles in the twist by making two fresh grooves?—The friction will not be increased; by making the bullet taper it rather reduces the friction, because the forepart of it is not likely to fill the grooves so completely as it would if it were a perfect cylinder. It secures a rotatory motion by the base fitting well, the other part requiring to be sufficiently large to be steady, but nothing more. Besides that, having a wrapper on it, it is allowed to enter freely into the barrel without any tendency to be rubbed or ruffled.

425. Are you at all able to account for the occasional wild shooting which your rifle makes?—Yes. Of the 130 rounds that I got from the Committee to lubricate with wax, 11 were not fit to use—it was my people at home, who had been very careless—some of the brass of the cases was turned in, presenting a sharp edge to the bullet coming out, which must of course have torn the wrappers; the loading was very irregularly managed, one bullet had half the base defective.

426. Would not that be liable to occur if they were made in large quantities?—No, not if they were made by proper people; my people were not accustomed to making such quantities.

427. Have you turned your attention to the construction of locks, or any improvements in them?—No, nothing different from the usual lock, which I fancy is the best of all; other locks generally get much sooner out of order. Where there is a reduction of the number of pieces they invariably get quicker out of order. I have had many of them sent to me to repair.

428. What kind of locks have they been?—Top locks, and all sorts of breech-loading locks.

429. Have they been locks in which main springs were used?—Yes, in some cases the trigger acted directly on the spring, the latter acting upon the

* Hardened bullets are here referred to.

* In this answer witness was referring to the gauge not to the powder.

† This refers only to pure lead bullets.

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tumbler, which was combined with the cock; indeed I could not enumerate the variety of them, but they have been always more troublesome to keep in order.

430. After the experiments you have made, what kind of lubrication do you prefer?—I should use pure wax.

431. You prefer that for shooting?—Not entirely; and if it was quite the same, I should prefer to add a little softer lubrication. I think that would be an advantage; but I have done so well with the wax that I do not think there is much cause for any addition.

432. (*Earl Spencer.*) The rifle that you sent to Wimbledon last year was not fully stocked, the wood did not follow the barrel the whole way. Do you consider that it was sufficiently stocked for a military weapon?—I consider that it was stronger than those which are fully stocked, because, instead of that little strap which is attached to barrels generally with full stocks, I have a long strap attached to a solid body going down the whole length of the handle; it is bound together by the breech-pin, in the crown of the stock, and there is another pin from the girder to the end of the strap of the breech, binding it together so solidly that I think it is much stronger than the other. Then the fore end has nothing to do with supporting it, as the barrel is screwed into a solid body. I am convinced that if it was put to the test it would stand more than the full stocking.*

433. It is not necessary, in your opinion, to have a piece of wood running nearly to the end of the muzzle to protect that part of the barrel?—Not quite to the muzzle. I do not think it is necessary to carry it further than that (*describing*).

434. Was there not some little difference in the lock of that gun?—Yes; there is détente, but it is not necessary; it could be done without.

435. Is not the détente an improvement?—Yes; but not so much for a 6 lb. pull; it is not necessary for that. If it was to be reduced to a lighter pull, of course it would become indispensable.

436. Does it cause any additional expense in the making of the lock?—A little; but it is very trifling.

437. You do not think that the wad you have spoken of in the middle of the cartridge would affect the flight of the bullet?—Not the slightest. There is a diagram to show the accuracy that was obtained, and that seems to be very good indeed (*handing in the same*); the vertical deviation was very trifling.

438. In the compound bullet, what lubricating wad do you use?—I should have a felt wad and an ebonite wad behind it.

439. You would put that wad in the middle to clean out the barrel?—Yes; it has that little piece of iron in the centre which gives more of a centrifugal motion to the bullet; it causes the rotatory motion to go on with less twist than without it, and I should say that it would give very great penetration.

440. Can you at all account for the fouling of the rifle near the muzzle, and not near the breech?—Yes; it was because there was not sufficient lubrication to lubricate the barrel all the way up; it was exhausted before it reached it. There is far too little on my bullets, and that is the cause of it; it is exhausted before it gets to that part of the barrel.

441. I think I have seen in Scotland rifles made by you for deer stalking, which were generally called "express rifles;" on what principle are they made?—The bullet has a saturated felt wad attached to the wrapper, and that keeps it very clean.

442. There is some other principle, is there not; you have a heavy charge of powder and a light bullet?—Yes; it is a hollow bullet, with a copper tube put in it, or a peg of wood, or beeswax.

443. Does that rifle give a low trajectory?—Yes; it carries a very light missile with a heavy charge of powder, and the velocity is very great at 200 yards; after that it falls very fast. At 250 yards it will hit a good bit below the object, but not up to 200 yards; the lightness of the missile of course accounts for it.

444. Up to 200 yards the crushing power of the bullet is very great, is it not?—Yes, very great; it makes an immense hole.

445. But it does not go through an animal as a heavier bullet would?—No, the great velocity prevents that.

446. The same sort of principle might, I suppose, be applied to a military weapon?—Just the same; the same twist would do if the bullet was proportioned for it.

447. That is to say, you could get with a heavy charge of powder and a light bullet a very low trajectory up to 500 yards?—Yes, up to that.

448. What would be the pitch of the twist you would prefer for the military rifle?—To use two kinds of bullets I should think it would require to be fully ·450 gauge, and to be 30 inches for both purposes.

449. With a turn of 30 inches?—Yes.

450. Would you prefer that to a turn of 20 inches?—Yes; 20 inches would be too quick for that length of missile.

451. If you got good shooting with a muzzle-loader under certain conditions, I suppose you feel quite sure you would obtain the same good shooting under somewhat altered conditions with a breech-loader?—I think so.

452. Not always, perhaps?—A missile that would shoot out of a muzzle-loader correctly would also do the same out of a breech-loader.

453. Supposing you had a barrel with a particular kind of grooving and bore that fired well as a muzzle-loader, could you make the same barrel shoot well with a breech-loader?—There might be some conditions different. If it was for quiet slow shooting the difference would be scarcely apparent, but if it was for rapid shooting I think there would of a necessity be some difference. In order to prevent fouling I do not think that a very short missile and a quick turn would do to shoot rapidly in the first place, and then to shoot for accuracy afterwards, because it would ride over the grooves.

454. For slow shooting you could make any rifle that fired well as a muzzle-loader shoot well as a breech-loader?—I think so, if the missile was reduced to the size of a deer-stalking missile. It would be too short I think for rapidity and accuracy combined, but, by adopting a medium-sized missile, I believe they could be obtained.

455. Was it entirely the fouling that made the rifle fail when used for rapid firing?—Entirely the fouling.

456. Whereas in a muzzle-loader every time you load you clean out the barrel?—Quite so.

457. (*Captain Mackinnon.*) Do you ever observe any effects of forward fire on your bullets, that is, the gas getting round the bullet and scoring it when it is in the barrel?—No.

458. You have, I believe, picked up bullets after you have fired them?—Yes, and they have always had the impression of the rifling perfectly upon them all. We have sometimes fired them into water, so as to prevent them being knocked about, and we have still found upon them as perfectly as possible the marks of the rifling.

459. With no marks of forward fire, such as scoring?—No, nothing else.

460. (*Captain Rawlins.*) Do you think that pure beeswax will foul the rifle more than any softer lubrication?—It will cause a higher trajectory, because there is more friction in it, and I think it is possible that it would be a little more foul with the beeswax alone than with a slight addition of grease of some description.

461. (*Chairman.*) Supposing more guns were required, say four or six, how long would you require to make them?—At this season of the year they could be made more quickly than in the summer season. I think they could be made in three months, but that would be quite short time enough to give.

* This refers to a stock constructed in two pieces, the butt and fore-stock being separate.

I think a little longer would be all the better, to enable us to try experiments.

462. That would be to perfect yourself in theory; but if you had made up your mind what kind of rifles were good you would not require to make experiments?—If I were to set to work to do that which I believe to be the best it could be done no doubt in less time. I should think in two months, or between two and three months, six rifles could be made, to be made carefully.

463. Supposing precise instructions were given as to the make of the guns, how long do you suppose it would take you, with no great peculiarities in them?—I think that three months would not be too long to do justice to them.

464. I believe you sent to us first more than one system of breech mechanism?—Yes.

465. From the experience you have gained, which system of breech mechanism do you prefer?—I prefer the present one which you have.

466. (*Earl Spencer.*) Does it ever happen, in your ordinary course of business, that a gentleman comes and says, "I want a rifle with your breech mechanism, but with a Whitworth barrel?"—No, that has not happened.

467. Supposing it did, could you carry out an order of that sort?—Not with the Whitworth.

468. Why not?—Unless it was 12 angles instead of six; the hexagon would not do for a breech-loader.

469. You could not apply the Whitworth barrel to your system of breech mechanism?—Not the hexagon barrel.

470. (*Captain Mackinnon.*) Could you do so in a manufacturing point of view?—Yes; we could put in any barrel to the breech; any barrel could be put to the body.

471. And *vice versâ*?—Yes.

472. (*Earl Spencer.*) Should you be at liberty to do so?—Yes, by paying a royalty.

473. Of how much?—About 1*s.* a gun.

474. (*Mr. Ross.*) Will you state to the Committee your reasons for preferring a small-bore to the present Government gauge?—Because it gives a much flatter trajectory and greater accuracy.

475. And better penetration?—Yes, and greater accuracy at a longer distance.

476. Is oil a good lubricant in a felt wad?—Yes; animal oil is the best of all.

477. Do you think it would stand extremes of climate?—I have had some of these cartridges sent to India, and they have come back again, and have done very well, but I cannot say much about that.

478. Do you think that having paper wrapped round the bullet is sometimes the cause of wild shots from the paper adhering to the bullet and making a sort of wing?—If the wax or lubrication is put up to the very end of the wrapper it occasionally sticks to it; but if about the eighth of an inch of the wrapper is not lubricated at all it comes away very freely.

479. I suppose your bullets do, to a certain extent, force their way from the chamber into the barrel?—Yes, they do slightly.

480. Where does the expansion take place?—I think the expansion takes place about 6 inches from the cartridge, or from 3 to 6 inches. I do not believe it is fully expanded the moment it leaves the chamber; I think it has entered into the rifling before the full expansion takes place.

481. (*Earl Spencer.*) Are you able to prove that?—We have had barrels cut down until we came to 2 inches, and it was found that it went out without any marking when reduced to a little under 3 inches.

482. Do not you think that it ever expands into the chamber when it is larger than the bullet?—In so very trifling a degree that I think it would be scarcely perceptible.

483. Then the act of forcing through the grooves can never take place unless the bullet is actually larger than the barrel?—Yes; but we do not make them larger, we make the bullets so that they will pass through with a little pressure.*

484. But I am speaking of other systems besides your own?—I believe that for the angles given by the hexagon or octagon form it requires to be a little larger, because the expansion would not be sufficient to fill those angles; but with my own the centre of the planes and the tops of the lands are cocentric with the axis of the bore, and the expansion is very trifling. In the cuts of my rifle there are double the number of points bearing upon that cylindrical missile; if there are seven cuts there are 14 points of bearing, giving the least possible expansion, and only that which is necessary to complete the fit of the barrel, and consequently restricting the missile to the very minimum of expansion, but still there is a very powerful rotatory motion. Both the lands and the angles have their work to do, but either of them is sufficient to give the rotatory motion to the bullet.

485. Have you formed any opinion upon Metford's principle of rifling?—I think it is a very nice rifle for a muzzle-loader, but I do not know how it might be for a breech-loader. I do not believe in a progressive twist at all. Any curvilinear or segmental cut must be more susceptible of injury than an angular cut, and would not stand the same rough usage. These very delicate grooves, segmental or curvilinear, are very easily spoiled at the muzzle, and when the first inch of the muzzle is gone the bullet wanders in a strange way; there is nothing to protect them from injury in cleaning, but with an angular cut they retain their form, and it is sufficient to guide the missile from the very muzzle of the rifle, even after it is considerably worn, but any other of these arms are more liable to get out of shooting, either the elliptical form or with a double ellipsis. Mr. Boucher's curvilinear cut is the best of that description yet made.

486. (*Mr. Ross.*) If you had a muzzle-loading rifle and a breech-loader with the same description of barrel, using the same kind of bullet, and the same charge of powder, do you think you could obtain as good results from the breech-loader as from the muzzle-loader?—Not quite, because the cartridge case acts somewhat like a cushion, and reduces the power, and therefore the initial velocity.

487. Will you be kind enough to explain that?—It is in this way: when the powder ignites the cartridge gives way, as if it was in a vacuum, and the yielding of the cartridge case to the chamber of the gun reduces the power of the charge.

488. You mean that in the first instance there is a loss of power in expanding the cartridge case to fill the barrel?—Yes.

489. (*Chairman.*) Are there any particular points that you wish to bring before the attention of the Committee?—I have here some memoranda which I should like to read.†

"Calibres and Twists."

"·577 bore, solid bullet	- 530	grains,	spiral,	4 feet.
"Do. do., hollow-plugged,	480	do.	do.	4 feet 4 inches.
"·500 bore, solid bullet	- 530	do.	do.	2 feet 6 inches.
"Do. do., hollow do.	- 480	do.	do.	2 feet 9 inches.
"·450 do., solid bullet	- 530	do.	do.	1 foot 9 inches
"Do. do., hollow do.	- 480	do.	do.	1 foot 10½ ins.

"Length of barrel 30 inches, and not exceeding 33 "inches, cuts in ·447 to ·457, 9 plains and re- "entering angles cocentrically with axis of bore; "the advantage of which is great rotating power "without causing any injurious distortion of the "bullet."

490. (*Earl Spencer.*) Why do you consider a short barrel best for a breech-loader?—I consider that a 30-inch barrel for a breech-loader and a ·450 gauge is better than a longer one; it should certainly not exceed 33 inches to get the best results from it.

* This refers to soft lead bullets.

† In his memoranda the witness stated that Capt. Fairholm's sights, as described in the "Volunteer Service Gazette" of 18th January 1868, were such as he would recommend for a military rifle.

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491. For what reason?—Because, before traversing that length of barrel, the bullet has got all the benefit of expansion to the shape of the rifle; and the friction must be comparatively less if it has that three inches saved in travelling through the barrel; the charge will be perfectly ignited in that length. The bullet would go with greater velocity from a barrel 30 inches long than from a barrel of 33 inches; the fouling would probably be greater in the longer barrel.

492. Would not the lubrication retain its power?—Yes; but it would be more likely to be exhausted the further it travelled in a hot barrel.

The witness withdrew.

Adjourned till to-morrow at 11 o'clock.

War Office, Friday, 7th February 1868.

PRESENT:

LIEUT.-COLONEL FLETCHER IN THE CHAIR.

CAPTAIN RAWLINS.	E. ROSS, Esq.
CAPTAIN MACKINNON.	CAPTAIN HAIG, Secretary.
EARL SPENCER, K.G.	

Major G. V. Fosbery, V.C.
7 Feb. 1868.

Major G. V. FOSBERY, V.C., examined.

493. (*Chairman*). I believe you have had some experience on service in the use of shells?—Yes.

494. Where have you seen shells used?—They were used under my direction at Umbeyla, in the north-west of India.

495. In what capacity were you then serving?—I was directed to take charge of the marksmen of the force and make experiments with the shells.

496. Will you be kind enough to describe to the Committee what were the effects of the shells, and how you found them to answer during that campaign?—They were tried in the first instance to get the range for the artillery and infantry, and they were very successful in doing that. We were always able to determine the distance of our enemy, and to bring the fire, whether of shell or of plain bullet, upon them.

497. Can you mention any special instance where that was the case?—It occurred particularly in the action that was called in the despatches the action of the Conical Hill. The enemy were upon a hill at a distance of 650 yards, with a ravine between them and our mountain train battery. No one knew the distance, and I was referred to to ascertain the distance with rifle shells. I did so. The fuzes were cut, the shells prepared, and a fire was opened immediately from the mountain artillery, which proved so very destructive that a charge by one of the Punjaub regiments cleared the enemy out, and the thing was over.

498. Was any evidence given of the moral effect produced on the enemy by the shells?—So far so that the enemy sent in a flag of truce begging us to discontinue their use; and that small parties of marksmen armed with them were able to drive out much larger bodies of the enemy when once they open fire with shell; they dreaded their use.

499. How do you usually use them—in the same way that you would ordinary bullets, or only on special occasions?—Each of the men under my command had a certain number of the shells, and they used them when they were ordered to do so.

500. Will you be good enough to state with what objects they were ordered to do so?—Generally on first taking up a position, it was merely to ascertain the range of any parties of the enemy, but occasionally when they got troublesome and we wanted to produce a greater effect than could be produced by the rifle bullet.

501. On one occasion, I believe, you used them for repulsing an attack?—Yes.

502. What was the effect that you found produced when you afterwards examined the bodies of those who were killed?—Sir Neville Chamberlayne found it difficult to believe that the men had not been killed by the fire of artillery.

503. Did you find that you got equally good shooting by using shells as with the ordinary bullet?—I found that my marksmen always preferred a shell for a long shot.

504. Did you require a different sighting for the use of shell from that required for the ordinary bullet?—The sighting was as nearly as possible the same; a very trifling allowance was necessary for fine shooting; the weight or balance of the shell was as nearly as possible the same as that of the bullet.

505. If a shell was used, it was of importance, I suppose, that the weight should be assimilated?—Yes, knowing that the sighting for the shell and the bullet must be exactly the same.

506. Have you made any other use of shells besides that of obtaining distances for the artillery and infantry, or as a means of repulsing an attack?—I used them for surveying the whole position.

507. Will you describe to the Committee how you did that?—The ground was surveyed with a rifle and a compass. I got the distances of the different points on the opposite hill, and took the bearings with a compass and protracted the angles upon the distances, and so made a sketch map of the whole position.

508. That was occupied by the enemy?—Yes, showing their position and our own too.

509. Had you any means of verifying the sketch afterwards?—Yes, I verified it by comparison with the trigonometrical survey.

510. Did you find it correct?—I found that I was only 20 yards out in one range of 950 yards.

511. Have you found that there was any danger in carrying these shells of their exploding accidentally?—I have seen them used when the rifles were very foul, and it was necessary to force them home by repeated blows of the ramrod. I have used them in rough work, in a hurry, and always without accident.

512. Have you ever seen them used for breech-loaders?—Never.

513. I suppose there would be less risk in breech-loaders than with muzzle-loaders?—Yes, because there would be no ramming down.

514. Did you find the long range of the present rifles of much service in that campaign?—We would have been glad to have had rifles of still greater accuracy, and longer range.

515. That I suppose was especially with regard to skirmishers?—Especially with regard to the marksmen.

516. Referring to the other troops, what do you consider to be the chief requisites for a military arm?—Flatness of trajectory and sufficient accuracy not to discourage the men, but to throw as little as possible of the blame of a bad shot—the margin of error

in fact—on the gun, and to throw it all, or as much as possible, on the soldier, because we can improve him by training.

517. I believe you have been over to Vincennes several times lately?—Yes, I was over there lately.

518. Have you had any experience of shooting with the Chassepôt?—I have seen it fired; I have seen the troops practising with it.

519. What is your opinion as to that arm?—I believe it is not a very accurate arm, but the trajectory is wonderfully flat; the bullet seemed to go up to the target in a very short space of time.

520. Do the French lay great stress on the flatness of the trajectory?—Very great; so much so that they have sacrificed accuracy to a great extent to obtain it.

521. Up to what range?—Up to 1,000 metres; they calculate they have obtained it.

522. Have they used explosive bullets at all?—No, they have had the system of explosive bullets before them, but they are as yet undecided; they profess to be very much guided by our views on the subject.

523. Do you see any objection to the troops being supplied with explosive bullets?—None, except in the case of very short ranges, then a shell would have less effect than a solid bullet from want of penetration.

524. Did you ever find any evil arise from the want of penetration in those bullets in the campaign in which you served?—No, they seemed to produce greater effect than the ordinary bullets at whatever range they were used.

525. Have you made any experiments recently with rifles of different calibres?—Yes.

526. What is your opinion as to the calibre which would best answer the purpose of a military weapon?—I think that I can hardly answer that question without going into the reason of the thing. I believe that the calibre of the present small-bore rifle was decided by the weight of lead given to Mr Whitworth, viz. 530 grains, who was set to work to determine the best form of projectile, and he found that in a cylindrical projectile of 2½ diameters in length the lead was disposed in the best possible form, and such a projectile was found to be ·451 in diameter; he was limited to 530 grains of lead. Now we have reduced the weight of the bullet then supposed to be necessary, and the question is whether the same law does not hold good, and whether the calibre ought not to be reduced at the same time. The only difficulty in our way appears to be that of fouling.

527. Have you tried the ·451 bore and the ·500 bore in the same kind of rifles?—Yes.

528. With which did you attain the greatest flatness of trajectory and the greatest accuracy?—With the ·451.

529. Have you found any defects in that as compared with the other?—With the present arrangement of cartridge the fouling increases very rapidly.

530. To what do you attribute that?—To the insufficiency of the present method of lubrication.

531. Do you think that if a different description of lubrication was used, or more of it, you would get rid of fouling?—I think some special lubricating contrivance which would not be very difficult to design is required, and that a small-bore might then be made to keep itself clean up to as many shots as would be really necessary on service—say 100 or 120.

532. When you say that the accuracy of the ·451 bore deteriorated from fouling, after how many shots was that?—It began to be very perceptible after 40 or 50.

533. Were the shots fired with great rapidity, or in the ordinary way?—They were fired with considerable rapidity, so as to heat the rifle.

534. Would heating the rifle tend to produce fouling?—With the beeswax lubricator it is rather apt to have a contrary effect.

535. I believe you have tried cartridges made of compressed powder?—Yes, but quite lately.

536. How did you find them shoot?—I found them shoot with great regularity; they gave great accuracy, and seemed to be very satisfactory in every way.

537. Is not the strength of compressed powder greater than that of ordinary powder?—Yes.

538. Therefore a shorter cartridge can be used?—Yes, if only the compressed powder will answer for service.

539. Have you formed any opinion upon that subject?—I had a conversation with General Le Bœuf on the subject the other day, and he informed me that compressed powder in some form had been issued to several regiments in the French army, but that it had been found to give rise to great irregularities in the shooting, after it had been carried for some time in the soldier's pouch. The question, therefore, is what amount of rough usage compressed powder will stand in these cartridges. If it should succeed thoroughly and will stand knocking about, it is by far the best thing in every way, because of the way in which the cartridge is shortened, and the extra strength of the powder.

540. Were the cartridges of which the French general spoke paper cartridges?—Yes.

541. When you say that they deteriorate in the soldier's pouch, is that from damp or from being knocked about?—From what the general said, I understood it to be from rough usage.

542. Were the cartridges made with a chamber passing up them in the same way as those which have been lately made by Colonel Boxer?—I think not, but I am not sure.

543. Is there not a sort of gloss put over the compressed powder?—I do not know; I believe it to be simply powder compressed.

544. How do the grains of the powder adhere together?—If dry powder be compressed it will adhere of itself with considerable force.

545. You do not know that there is any gum used for the purpose?—I am not aware that there is.

546. (*Captain Rawlins.*) Have you ever fired any shell out of the small-bore rifles?—Yes, many times.

547. Did they give the same results?—I am speaking now of my own shell, not of the Metford shell. I have tried them in my own small-bore rifle.

548. Did you obtain the same result?—Yes.

549. Have you ever seen the Chassepôt fired at 1,000 yards?—No.

550. You do not know the elevation at that distance?—No.

551. Have you heard that it gives a very flat trajectory at 1,000 yards?—I believe that it does.

552. (*Captain Mackinnon.*) Do you think that the present length of the rifle is absolutely necessary for a military weapon, or that any harm would arise from its being made shorter if a shorter rifle was found quite sufficient for accuracy?—I think that as long as men fire in two ranks we could not conveniently shorten the arm very much without danger of accident unless the drill be altered; the question of the bayonet also comes in.

553. What weight of bullet do you consider necessary for a military projectile?—I think that 400 grains are quite sufficient.

554. For a low trajectory?—Yes.

555. And for accuracy also?—Yes, for accuracy up to 1,000 yards.

556. Have you formed any opinion of the comparative value of metallic and paper cartridges for military purposes?—I think that the disadvantages of the paper cartridge are so great that there is no comparison between the two. One very great disadvantage of the paper cartridge is, that a miss-fire necessitates the drawing of the ramrod for the purpose of getting the cartridge out, and it is then very likely to break up and clog the gun with powder.

557. You have stated that in firing with a small-bore rifle, after firing 40 rounds it got foul?—Yes, it fouled very rapidly.

558. Can you imagine any case in an action in which 20 rounds would be fired with great rapidity?—I have seen on one occasion the men exhaust their pouches after firing as rapidly as they could; but that is no doubt rare.

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559. (*Mr. Ross.*) You did not state how it was you were enabled to judge distances by means of the shells. I presume you saw them explode?—Yes.

560. Had you any difficulty in seeing the explosion at 1,000 yards?—I have seen it and heard it at 1,200 yards.

561. Are you quite satisfied that even at extreme ranges, say 1,000 yards, accurate shooting could be made with great effect in warfare with shell or bullet?—I do not believe that it would be a usual thing, but I believe the possession of a weapon which would enable you to bring an accurate fire to bear upon an enemy at 1,000 yards very important.

562. At what distance do you think troops would commence firing with the utmost rapidity in a general action?—At 150 or 200 yards.

563. At that short distance you would expect a great per-centage of shots to take effect?—Yes.

564. Under those circumstances, what number of rounds do you think each man in a regiment would be likely to be called on to fire with great rapidity?—From 10 to 15.

565. Do you think that troops armed with our present service rifle would be at a disadvantage if opposed to troops armed with the Chassepôt?—Decidedly.

566. For what reasons?—Owing in the first place to the great difference between the trajectory of the Chassepôt and the trajectory of our service rifle.

567. (*Earl Spencer.*) Were the shells which you used in the Umbeyla campaign your own shells?—Yes.

568. Will you be kind enough to describe to the Committee a little more precisely the method by which you judged the distance?—Suppose that I wished to ascertain the distance of a hill opposite to me, I should choose some piece of ground, a rock, or other conspicuous point, which would give me a fair idea of the line. I should then judge the distance as nearly as possible, and graduate the sight for that distance. I should fire and watch the explosion of the shell, and if I found it too low I should raise my sighting until the shell dropped on to the exact spot. I should then read off the distance on the sight of my rifle.

569. Then it is, in fact, done by the sight of the rifle?—Yes, it is a tentative process entirely.

570. Have you ever tried compressed powder in a sharp frost?—No.

571. In a military point of view, do you attribute much importance to the strength of the barrel in your rifle?—I think the barrel ought to be strong enough to enable the bayonet to be used freely without bending it.

572. Do you think the present barrel is sufficiently strong to stand the rough usage of the service?—Not the Enfield barrel; but a barrel of the same thickness if of steel would be.

573. Do you think that there would be great advantages in a steel barrel?—Yes, immense advantages.

574. You have, I believe, considered the question of the lock in the military gun?—Yes, I have designed a lock for my own arm.

575. Do you think it would be an advantage to simplify the present lock?—I think that if a central-fire cartridge is used, which requires for its ignition a blow delivered in the axis of the barrel, that that blow should be as direct as possible.

576. (*Chairman.*) If you were to fire these shells out of a small-bore, would there at a long distance be sufficient explosion to mark the place where the shell fell?—Do you mean with my form of shell?

577. Yes, and with the ·451 bore?—Yes.

578. (*Captain Rawlins.*) You stated just now that you had seen on service the men's pouches emptied; do you know how many rounds they had to start with?—Each man had 53 rounds in his pouch, and I served out to 26 men 500 rounds of additional ammunition, a large part of which was also used.

579. (*Mr. Ross.*) Was that number of rounds fired with great rapidity?—In about four hours.

580. (*Captain Mackinnon.*) My question was whether the men fired as quickly as they could?—Every round was not fired successively with rapidity, but every now and then, when an attack was made, they fired as quickly as possible.

581. (*Mr. Ross.*) And then again they would cease firing?—Yes, but there would not be an entire cessation of firing.

582. (*Earl Spencer.*) Have you ever made any calculation as to the per-centage of shots that take effect in an action?—On one occasion I did, and I found that we placed *hors de combat* one man for every 12½ rounds of ball-cartridge.

583. At what distance were you then firing?—At distances varying from 35 yards to 500.

584. (*Captain Mackinnon.*) Were the men who did that picked marksmen?—Yes.

585. Have you seen any of the stocks made on the American principle in two pieces; if so, are they strong enough for military purposes, or is it necessary to have a long stock as in our service?—I think the stock should reach up as near to the muzzle as possible.

586. Do you think it should be in one piece or two?—I think in one piece. I think that a divided stock is always liable to work, sooner or later.

587. (*Mr. Ross.*) I suppose you could depend upon the men, if they found the rifles very foul after firing 100 rounds, cleaning them out?—Yes.

588. You think there would be no difficulty in cleaning a rifle after it was fouled?—None.

The witness withdrew.

Col. Haliday.

Colonel Haliday (Inspector-General of Musketry) examined.

589. (*Chairman.*) I believe you are now Inspector-General of Musketry?—Yes, I succeeded General Hay.

590. You were at Fleetwood for some time?—Yes, for rather more than three years as commandant.

591. When did you succeed General Hay at Hythe?—Last October.

592. Will you be good enough to give the Committee generally your opinion as to the principal requisites of a military arm, with regard to the value of a low trajectory and also of accuracy?—The value of a low trajectory can scarcely be overstated; it is one of the most important requisites for a military arm, next of course to accuracy, but the weight of the arm should not exceed that which a man can carry without distress.

593. When you say that a low trajectory is next in importance to accuracy, at what range do you mean?—Of course it is desirable that we should have as long a range as possible, at least so far as a man's eyesight goes. I do not know that there is any advantage in trying to obtain great accuracy and carrying it beyond that at which an ordinary man's eyesight will enable him to distinguish the object he wants to hit. That is of course really what regulates accuracy of shooting at long ranges, but the majority of men have not eyesight to distinguish small objects at great distances.

594. Should you consider a low trajectory up to 500 yards a greater requisite for military purposes than extreme accuracy at 800 or 1,000 yards?—I should call 500 yards rather a limited extent. I should desire to carry it beyond 500 yards, because in the case of infantry being attacked by cavalry it is obvious that it is very desirable to be enabled to throw in such a quantity of shot as will cripple or disable that body of cavalry at a distance somewhat beyond 500 yards. I should carry it to 600 or 650 yards.

595. Supposing it was necessary to sacrifice extreme accuracy at long ranges in order to obtain a low trajectory up to 500 yards, which do you consider the most important for a military arm, or can you form a comparison?—When you speak of long

range, I presume you mean beyond 800 yards and up to 1,000?

596. Yes.—I should say in that case that it is of more importance to have a low trajectory up to 500 yards than to have great accuracy at distances exceeding 800 yards, or from 900 to 1,000.

597. With regard to the weight of a rifle, what do you think ought to be the weight of a service arm?—I think it should not exceed the weight of the present converted Enfield or Snider, because it tells very much upon a man in a long day.

598. With regard to its length, do you think it could be shortened, supposing the shooting qualities to be equally good for a military arm?—Unquestionably so.

599. Would there not be some danger, if the men were firing in two ranks, of the front rank man being injured by the fire of his rear rank man?—I think that that can easily be obviated by the front rank kneeling.

600. But if both were standing, might there not be danger?—Yes; but the danger in reality would be rather of one man hitting the weapon of the other than of shooting or injuring him.

601. Would there not be a danger of hitting the front man's fingers?—Scarcely so. I do not think that that would occur. The accidents which I have known to occur have been, generally speaking, the blowing off one of the bands of the rifle of the front rank man or striking the barrel of the rifle of the front rank man. When in the act of loading the soldier cants his barrel slightly to the right, and if he elevates the muzzle too much it may come exactly in the way of the bullet of the rear rank man.

602. I suppose you would consider a rifle by which you could attain a lower trajectory than with the present arm a desirable one to have in the service?—Yes, decidedly.

603. And also one with which you could attain greater accuracy than with the present arm?—Certainly, the greater perfection you can attain in that way the better; an arm of course is equal in the hands of indifferent shooters, but it is desirable to have one in which the most experienced shots or sharpshooters could use, if it were necessary to have picked men to fire into embrasures.

604. A low trajectory would apply to all?—Yes.

605. To obtain a rifle with a lower trajectory, and which would give greater accuracy—not exceeding 9 lbs. 8 ounces in weight—what bore would you recommend?—I should not be inclined to go very much below the present. I think we might reduce the present a little. I should say to about half an inch, but I should not be disposed to go much below the ·500.

606. Would the ·451 bore be too small?—I am a little averse to express a decided opinion, because there are so many points connected with it. Crippling the enemy is not the only thing we have to think of.

607. What objections might there be to a bullet of those dimensions?—One objection to reducing the diameter very much is that you must have a bullet of a certain weight to carry sufficiently far; if you elongate it too much it seems to me that it would involve a mechanical difficulty in breech-loading.

608. That would be applicable to the present Snider?—Yes; and, as far as I can judge, to any system of breech-loading, even if it were not attended with other disadvantages.

609. Supposing that that difficulty could be obviated—I mean the difficulty of extraction—do you see any difficulty in a military point of view to a bullet for the ·451 bore?—No, I cannot say that I do, but I think one may perceive that a bullet of small dimensions is not likely to make a serious wound, and it may not soon cripple a man; of course it is not so likely to inflict a serious wound, or to cause much loss of blood. I think if you reduced the diameter of the bullet much you might have a great many men wounded in action, but who would not be crippled seriously for a length of time.

610. Have you had much experience on service?—No, I have not been in service at all. It has been my misfortune never to have been in active service. *Col. Haliday.* 7 Feb. 1868.

611. Have you formed any opinion with regard to the best twist to be given to rifles?—Yes; and I think that the present Enfield has too slow a twist—the long Enfield; we, generally speaking, consider the Naval rifle, which has a quicker twist, superior; one turn in 4 feet, I think, is superior to one turn in 6 feet 6 inches.

612. With regard to an increasing twist, have you any opinion to express upon that point?—I should be disposed to doubt the value of an increasing twist. I am aware that it is adopted in the Lancaster rifle, but I have never been able to satisfy myself of the advantage of it in a barrel of sufficient length. I can conceive that in pieces of ordnance and in barrels of contracted length there may be an advantage. In these the increasing twist creates greater friction and confines the bullet somewhat longer, and thereby to a certain extent compensates for the shortness of the barrel; but I see no advantage in it where the barrel is of sufficient length to give you the full force of the powder, and to ensure that all the charge shall be burned.

613. Have you seen any comparative trials made between the Whitworth, the Metford, and the Lancaster systems of rifling?—No, I have not witnessed any experiments made with those arms specially.

614. Do you know anything of the shooting qualities of the Lancaster arm with elliptical bore?—We have occasionally had men—the Engineers—armed with it, and I have heard officers of the Engineers speak of it. Captain Lempriere, who was one of my Captain Instructors for some time at Fleetwood, was an officer in the Engineers, and to the best of my recollection his opinion was that it was liable to what we call strip, and it was occasionally wild in shooting.

615. With regard to the bullets, have you turned your attention much to the shape of them, or their composition, their weight, and the necessary charge of powder?—No, I have not much. I have not yet had an opportunity of doing much in the way of experiments, but I think one thing is quite clear, namely, that we cannot dispense with the leaden bullet. I do not think that the mechanically fitting bullet of hardened metal has sufficient advantages to induce us to give up the other.

616. Your objection would be to the mechanical fitting of the bullet, and not to the composition of the bullet?—No, provided we can obtain a metal at once ductile so that the bullet will take from the explosion of the powder the shape of the grooving and have sufficient weight; that, of course, is the difficulty.

617. You spoke just now of one possible objection to a small bullet, that the bullet would not make a sufficiently bad wound; have you ever tried any of the explosive bullets?—No, I have not; but I have heard that in shooting large animals the explosive bullet is very destructive and effective.

618. Have you seen anything of repeating rifles?—I have seen the Spencer repeating rifle; we had one of them at Fleetwood about 18 months ago, and we fired sometimes with it.

619. How did that work; did it in any way get out of order?—No, it did not get out of order there, because in point of fact it was only tried as a sort of amateur affair. But I am convinced that as an arm for the service it would be quite useless, it would be difficult to keep it in such order as that the action would work, I mean the joints necessary for protruding the charge; and the whole plan appeared to involve the necessity of such perfect cleanliness to avoid friction—such a high state of perfection in all the parts. I think it could never be expected to be useful as a military arm. In a very dry climate and as a sporting arm it might answer, but I do not believe that as a weapon for military purposes it is of any value.

620. You have not perhaps made any experiments or seen many of the new descriptions of locks and rifles?—No, not many. I know the Chassepôt and

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the Prussian needle gun, and I have seen the Carter and Edwards lock.

621. Have you formed any decided opinion whether those descriptions of locks are an improvement on the present lock, or the contrary?—The extreme simplicity of the Carter and Edwards strikes one as giving an advantage, but I am by no means satisfied about the safety of it at present; the only one that I saw appeared objectionable on that point.

622. (*Captain Rawlins.*) Have you had anything to do with cartridges made of compressed powder?—I have not seen them.

623. Have you witnessed any shooting with the Chassepôt rifle?—The only experiments that I have seen performed with the Chassepôt were under these circumstances: an officer who came to go through the last course at Hythe brought one of those arms, I fancy, for his own amusement, and he tried its shooting against another officer who had a Carter and Edwards, but neither of them made good shooting, and the Chassepôt was constantly getting out of order.

624. (*Captain Mackinnon.*) Different opinions are entertained as to whether the bullet should be very heavy or of moderate weight; what weight of bullet do you consider necessary for a military rifle?—I think it should not be a very heavy bullet, and for this reason, that it would add so much to the weight a man had to carry.

625. But I mean as to the trajectory. What weight of bullet should you prefer with a view to crippling the enemy?—I should say not much under 500 grains.

626. Is there any relative proportion between the diameter and length of that bullet of 500 grains that you think would be a proper proportion for flight?—I have not formed any decided opinion upon that point. The principal objection, I think, to a very elongated bullet is the difficulty with regard to the loading—the insertion.

627. Do you think it would be detrimental in the service to have two sorts of ammunition, with the same length of cartridge for the same arm; one being suited for accuracy at long ranges, and the other for a very flat trajectory at short ranges?—For general purposes on service, I think one could scarcely expect that a soldier would attend to the distinction between the two, unless he was equipped with two different pouches.

628. I am referring rather to a certain number of picked men being armed with them?—Then I see no objection to the introduction of such a thing, if such a thing can be obtained.

629. Have you seen any of the American guns, with the stock in two pieces?—No, I have not.

630. Supposing line firing was opened, how many shots do you think it would be necessary for a man to fire with great rapidity in action to create an effect, supposing the fire to be opened at 300 yards, and having reference to fouling?—Very much depends upon the accuracy of the shooting. Soldiers at present, I think, have been accustomed to rapidity, and to care so little about accuracy of aim, that I am disposed myself rather to deprecate that striving for rapidity, because I believe that if the men really fire tolerably well, five or six rounds from each man ought completely to annihilate any enemy you are opposed to, that is, at short ranges.

631. You have practised probably both with paper cartridges and metallic ones?—Yes.

632. Do you give any decided preference to one system of cartridges over the other?—I certainly think that a cartridge which you can blow out entirely without the necessity of extracting the base has an advantage over the other.

633. But I mean with reference to service to which English troops are exposed in all climates, to stand exposure and very rough work, and to be stored perhaps for years?—Taking all the points into consideration, I am disposed to prefer the metallic cartridge as it is at present constructed; it keeps remarkably well.

634. (*Mr. Ross.*) Do you think that long-range shooting in the case of well trained soldiers would be effective in service?—No; I do not believe in the practicability in action of much long-range shooting.

635. Not in the case of skirmishers?—No, not even with them. The value of long-range shooting, I think, is in the attack of works, in firing into embrasures, and in keeping down the fire of horse artillery.

636. I spoke of the service generally?—It is valuable, of course, in that particular point; in keeping down the fire of horse artillery it would be a very important thing.

637. (*Earl Spencer.*) You were talking of the effect of heavy bullets, but do you not think that a light bullet, with increased velocity, may produce very nearly the same effect as a heavy one?—I should doubt it.

638. Have you never seen heavy charges of powder and light bullets used in game rifles?—No. I can conceive that a bullet of small diameter might very easily go through the fleshy part of a man, and do him so little harm that the man after a short time might be able to come to the front again. But there is another question. I do not think it is at all desirable if you have an army in the field, and supposing that you defeat your enemy, that you should have to look after a great number of wounded men of your enemy, for it may be as great an inconvenience to you as a great number of wounded men of your own.

639. You seem to fear that the bullet might pass through a man and not make a sufficient hole?—Yes.

640. If the same effect could be produced by increasing the charge of powder, then you would see no objection to it?—That is the question. The orifice made by a small bullet, I think, is likely to be much less effective in doing more than temporarily crippling a man.

641. Have you never seen experiments tried with heavy charges and light bullets?—Eexperiments have been tried with regard to the penetration into wood, but its effect upon a man, I think, is a different thing. I have not seen it tried upon game.

642. Have you seen many of the muzzle-loading Whitworths that were issued some time ago in the service?—When I was at Fleetwood we frequently had a detachment of some of the corps armed with the Whitworth, who fired with them.

643. What was your opinion with regard to them?—They were objectionable on the point chiefly of loading; after a few rounds had been fired they fouled. There was then difficulty in getting the bullet down, and on one occasion an accident occurred to one of the men owing to that, and I found on inquiry that it was a common thing with the men of the 60th and others who were armed with that rifle, when they had fired a round or two, in order to get the ramrod down, to take hold of the cuff of their coat and get it between the man's hand and the top of the ramrod; and in one instance, in the case of a man who had a tight coat, the sleeve slipped when he was pressing it down, and the ramrod went through his hand. I found that the men were always loading in that way; that they constantly used the sleeve of the coat to get it on the palm of the hand; and in fact sometimes two men were obliged to go to the ramrod.

644. Did you observe whether those arms had been made at Manchester or at Enfield?—No, I cannot say that I noticed that, but I think that these arms were always Enfield arms.

645. Have you seen that Report upon the Whitworth rifle (*handing the same to the witness*)?—No, I have never seen this before.

646. It seems difficult to account for some reports of the Whitworth being so favourable and some pointing out the very defect you have named, and if you could have explained that the Committee would have been glad to have your opinion?—I cannot explain it. I had also an officer of the rifle brigade for some time with me as a subaltern instructor, who had been instructor to his battalion in the Mediterranean, and he stated that they had not found that difficulty as to

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the loading out there. I can scarcely account for it. I can only suppose that in different climates and temperatures the amount of fouling is different, or that it sticks more to the barrel, and creates more difficulty in loading in some cases than in others.

647. Did you refer just now to Mr. Markham?—Yes, he was with me for six or seven months.

648. I find that there are two reports from the very same place—from the Curragh; one is favourable and the other unfavourable. Can you at all account for that?—No, I cannot conceive but that there should be difficulty experienced, because the complaints of the difficulty have been so numerous; from all quarters I have heard them, and therefore I do not believe them to be imaginary. I know that the officers of the 60th told me that their men were constantly obliged to resort to the expedient I have mentioned to force the ramrod down.

649. And that was in consequence of the fouling?—Yes.

650. Did that deteriorate the shooting very much?—No, I do not think it did; any deterioration experienced was in the rapid firing, in the file-firing then practised. Of course any mechanical impediment in the way of loading would cause a serious delay.

651. That of course would be obviated in a breech-loader?—Yes; the rapidity of fire to be obtained with it is something wonderfully different from the other.

652. (*Chairman.*) I believe that the men who used the Whitworth were handicapped?—Yes, they had to make more points for some time, and they complained very much, and General Hay subsequently reduced the number of points to be made in consequence of the complaints made about them.

653. Do you think that the being too heavily handicapped may have rendered the men averse to their weapon, and therefore being prejudiced against the new weapon they exaggerated its defects?—No, I do not think that was the case, nor am I aware that the men disliked the weapon. The difficulty I have referred to was mentioned to me by the officers because it had been noticed by them, but I never heard any of them say that the men complained of the weapon, or that they disliked it.

654. (*Mr. Ross.*) Upon the whole were the results as to accuracy better from the Whitworth than from the Enfield?—Yes, especially at long ranges. I do not conceive that it gave any superiority at short ranges. If the distance was beyond 450 yards, unquestionably it did, and they continued to fire at longer ranges after the extreme ranges for the Enfield were reduced by 100 yards.

The witness withdrew.

Mr. J. H. Burton.

Mr. James H. Burton examined.

655. (*Chairman.*) You have had great experience, I believe, in the manufacture of military weapons?—Yes, I believe I may say so with propriety.

656. You were engaged in bringing over the machinery from Springfield to Enfield some years ago?—Yes, I was. Before the machinery was brought to England, at least a considerable part of that which was ordered from the States, I was engaged for upwards of a year in adapting it to the Enfield rifle; and after I came here with the machinery, I took charge of the technical management of the Enfield factory and put it into operation, and remained there five years.

657. Since that time, I believe, you have gained great experience during the recent war in America in the machine department at Richmond?—Yes.

658. What position did you hold?—My official title was Superintendent of Armouries.

659. Were you engaged in making arms at Richmond in the armouries there?—Yes.

660. In order to obtain the best description of military rifle, which do you consider to be the first requisite, the ammunition, the barrel, or the breech mechanism?—By all means the ammunition and the barrel.

661. Is it better to fix upon the ammunition first and then make the barrel, or make the barrel first and then the ammunition?—The two must be worked out together.

662. You think that each influences the other so much that they cannot be separated?—Quite so; they are intimately dependent upon each other, and unless there is perfect harmony between the two, no satisfactory results will be obtained.

663. With regard to the barrel of a rifle which is to weigh not more than 9 lbs. 8 ounces, what bore do you think is best adapted for military purposes; that is, to obtain from it a low trajectory as well as accuracy?—An answer to that question would involve other conditions which you do not specify in your question.

664. Will you be good enough to mention those conditions?—Our own Government have laid down that pure beeswax shall be the lubricant, and that is an important question as connected especially with small-bores, because a difficulty has been encountered heretofore in getting a small-bore to perform well, so that it would not foul, using simple beeswax as a lubricant, and therefore that becomes an important question as connected with small-bores; independently of that I should say that you might go as small as $\frac{45}{100}$ths of an inch; you would flatten the trajectory and obtain greater accuracy, and of course higher velocity, because a flat trajectory means high velocity, and, with a proper combination of projectile and barrel, accuracy also.

665. The question of lubrication being for the present set aside, do you consider that a ·500 or a ·451 is most suitable to obtain a low trajectory and accuracy?—Independently of all other considerations, I should say ·451 calibre: but there are other important questions.

666. Will you be good enough to name them?—There is the length which the column of powder occupies in the barrel, when simple powder or uncompressed powder is used. I think that that has something to do with the fouling of small-bores. I think that a portion of the column of powder, before it becomes ignited, is driven up through the barrel, that is to say, it has not time or space to be consumed as quickly as it has in a larger bore.

667. Do you think that that is the principal cause of fouling in small-bores?—I am inclined to think that it is.

668. From the experience you have had lately, do you think that compressed powder will be applicable for military weapons?—I quite think so.

669. Have you tried many experiments with the cartridges which Colonel Boxer has lately made of compressed powder?—I should, perhaps, not say many, but I have tried a considerable number, and I have obtained very excellent results.

670. Supposing that compressed powder was found applicable to cartridges, and that, therefore, you could have a shorter cartridge than is at present used for small-bores, do you still consider that ·451 would be the best bore, or would you recommend any other?—I think that the ·500 bore will fulfil the largest per-centage of essential conditions, looking at the manufacture, and the whole question from beginning to end.

671. Putting aside the question of the wax and the question of long cartridges, the $\frac{1}{2}$-inch bore you think is the best?—I do.

672. I think you gave the facility of manufacture as one reason why the $\frac{1}{2}$-inch bore is the best; but would there be any greater difficulty in manufacturing a barrel of ·451 than of ·500?—I think there would be some little; but with reference to the bore, I think it is obvious that it would be more difficult to bore a small hole, say, the size of this quill, through a barrel 30 inches long, than a hole of half an inch in diameter.

673. It would be, I suppose, more difficult to make a number exactly alike?—No; it is getting the hole

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drilled concentrically through a cylinder of steel, presuming that they are drilled.

674. Ought such a difficulty as that, with our present machinery, to have an influence in deciding the question between ·451 and ·500, considering the excellence attained in this country in machinery?—The drilling of steel barrels in this country is comparatively a new process; it has only been introduced within the last few years. There was never, during my experience at Enfield, anything done at it; it is since I left Enfield that something has been done there, but not to any very great extent, I am informed.

675. With regard to flatness of trajectory at 500 yards, do you believe that as flat a trajectory could be procured from a ½-inch bore as from a ·451 bore?—I think it could with compressed powder and a suitable bullet.

676. Would not the compressed powder influence the ·451 just as much as the ·500?—I do not think you can get what is technically termed the powder pellet in as good a shape with the ·451 calibre as with the ·500 calibre, with reference to the perfect combustion of the powder.

677. Therefore I suppose you mean that in a great many shots the shooting would not be so regular from the ·451 as from the ·500, using compressed powder?—That is my impression.

678. Would the trajectory be as low with the ½-inch bore as with the ·451 bore, using compressed powder?—It might not be quite so low at long ranges.

679. With regard to accuracy at longer ranges, should you always get the same accuracy under the same circumstances with the ½-inch bore as with the ·451 bore?—It may be questioned. I have some diagrams which show some of the results I have obtained at 500 yards with the ·500 bore, using compressed powder; they also show the angle of elevation at which the arm was fired, in a mechanical rest.

680. With regard to the twist, and take now the ½-inch bore, what length of barrel would you advise with reference to shooting qualities?—The actual length of the barrel would be dependent somewhat upon the length of the breech action; a long breech action would, of course, take up more of the length of the entire arm than a shorter one, and, consequently, would diminish the proportionate length of the barrel.

681. For shooting qualities only, what length should you say would be the best?—I should say about 36 inches, inclusive of the breech action.

682. What description of rifling do you think would be the best?—In my own experience I have found what is called the rounded groove to give the best results.

683. Is that the Metford principle?—I am not aware, for I do not know what that is. The groove I use is a segment of a circle smaller in diameter than that of the bore of the barrel, leaving between each two grooves a narrow line of that description (*describing*); the form of groove presents no re-entering angles in which fouling can accumulate, which is a desirable end to obtain.

684. What twist would you give?—I have found in a ·500 diameter that from 36 to 42 inch pitch gives the best results. I have tried both, and they both seem to give about equal results.

685. Do you consider an increasing twist good?—No, but an uniform twist, decreasing the depth of the grooves from the breech to the muzzle, gives the best results.

686. Why do you have a decreasing depth of grooves; is that to do away with friction?—I find that in practice its gives better results. I think it has something to do with keeping the barrel clean.

687. Then with regard to chambering the rifles. I suppose there is no doubt that all breech-loaders require a chamber?—None.

688. How far do you think that a bullet ought to project beyond the chamber into the rifling, or ought it to project beyond the chamber?—I do not think it is essential that the bullet should—at least the cylindrical part of the bullet—enter the rifling or the barrel itself, provided that the chamber is so contracted as to hold the axis of the bullet cocentrical with the axis of the barrel.

689. Do you believe that the bullets are expanded into the barrel, or are they simply forced through?—My impression is that the bullet is expanded the instant it receives the impact of the explosion.

690. Therefore, in all cases where there is chambering there must be forcing as well?—Yes, and that involves a very nice point; even a change of powder will throw the shooting off. A slower burning powder will not expand the bullet so much as a quicker burning powder, because the bullet does not receive so sudden a blow with slow burning powder.

691. You do not think that a bullet expands after it has received the first blow and as it is passing down the barrel?—No, I think not.

692. Then with regard to the make, speaking now of the ½-inch bore, do you consider it is necessary that the bullet should have a cup at the base to obtain expansion?—I should not be justified in saying that it is necessary; but so far as my experiments have gone, better results have been obtained with a bullet in which there has been a cavity and a plug.

693. Do you think that that is better than having a solid bullet, as far as you have seen?—I should say that I know better results have been obtained in that way, and of course I should say it is better.

694. Do you approve of the shape of the bullet which Colonel Boxer now makes with compressed powder, it is a hollow bullet?—Yes, with a baked clay plug, similar to that which is used in the regulation ammunition.

695. There is no plug at the end I think?—No, it is closed over; there is a cavity in the fore end; the bullet is closed over, which serves the same purpose as though the whole were not closed over, but filled up with a wooden plug, the object of which is to fill up the cavity, and the object of the cavity is to establish the centre of gravity at the most desirable point.

696. Have you turned your attention much to cartridges?—I have had to consider the question pretty closely in connexion with breech mechanism.

697. Do you approve of the copper cartridges used in America, speaking still of the ½-inch bore?—The copper cartridges which have been made in America, so far as my observation extends, have never been devised for carrying such a high charge of powder as is required in Europe, and my experience has convinced me that a copper cartridge, if made long enough to contain, say 70 grains, becomes both expensive to make and unreliable as to strength.

698. Is not that the fault of the material used, the copper?—Yes, to a very great extent it is, and the difficulties have been very great, which the manufacturers of copper cartridges have had to contend with in always getting the material of a proper character.

699. Then with regard to rim and central fire, which do you consider the best?—Central fire.

700. What are the objections to rim fire?—The objections to rim fire are several: in the first place, to make a copper cartridge with a rim weakens that portion where the flange is thrown out, and that is the very portion which requires the greatest strength; but into that weakened portion you put a large quantity of fulminate, which when distributed all round the rim increases the probability of that portion of the case being ruptured in the explosion. We know the nature of fulminate, and that it is very bursting in its effect when exploded.

701. Have you formed any decided opinion as to which are the best for a military arm, metallic cartridges or paper ones, as in the Chassepôt?—A metallic cartridge, by all means.

702. Supposing you use a metallic cartridge with a half-inch bore, what charge of powder and weight of bullet should you consider the best?—I have used 70 grains of powder compressed, which is equivalent to 80 grains uncompressed in its propellant force, and 380 grains of bullet.

703. Do you believe that those are the best proportions ?—I think so.

704. Have you ascertained conclusively that the compressed powder is so much stronger than the uncompressed ?—The principal evidence I have had of its increased strength, when compressed, has been in the flatness of the trajectory and the lowness of the angle of elevation at 500 yards. I have tried it alongside and against cartridges made up with uncompressed powder, and there is a very marked difference in the angle of elevation between the two in favour of the compressed powder, firing from the same gun.

705. How could you fire them from the same gun if there was a difference in the length of the cartridge ?—The uncompressed powder occupies more space, but for the purpose of experiments the bullet can be put more or less into the case of the cartridge.

706. Therefore there is no impossibility in having a rifle made that would fire both compressed and uncompressed powder for the purpose of experiments ?—I should not advise such a course. I should advise the making of a chambered rifle for each experiment ; you would then have the same relation of the bullet to the chamber and the bore of the barrel in each case.

707. In ordering barrels it would be almost necessary to specify the length of the cartridge you wished the barrels to be made for ?—Yes, if they were to be ordered chambered.

708. Could they be ordered unchambered and be chambered afterwards ?—Yes, without difficulty. I always order my barrels simply bored and rifled. The chambering I have done after I receive them.

709. That is to say, you cut away the lands in chambering ?—Yes.

710. With regard to the durability of compressed powder, do you know whether it is as durable and as little liable to injury from damp as the other ?—Of course so little time has elapsed since the idea was first brought forward that no opportunity has been had to establish that fact, but my own impression is, that it would be less subject to deterioration from damp than the uncompressed powder.

711. Do you see any objection to a harder metal being used than hardened lead for bullets ?—Of course the hardness of the lead has a direct influence upon the expansion of the projectile, and it would be very easy to harden a bullet to such an extent that it would not expand at all, at least perceptibly.

712. Then in that case you would use, I suppose, forcing without expansion ?—Yes ; what we call, technically, slugging.

713. Do you see any objection to slugging ?—I have never got such satisfactory results from a slugging as from an expanding bullet.

714. Have you ever seen any of Metford's or Fosbery's shells tried ?—I saw Mr. Metford try some of his shells when he first devised them, during the Crimean war, I think.

715. Not since then ?—No.

716. Were they used during the American war at all ?—To a very limited extent ; only with a few special arms that were obtained from here for very special service.

717. Were any repeating arms used during the American war ?—The Southern army were not able to obtain repeating arms, and during my identification with the Southern army my experience of repeating arms was very limited.

718. Supposing that rifles were required for further experiments, what do you think would be a fair time to allow to gunmakers to make them ?—That would very much depend upon the conditions laid down. If you gave the maker the barrel and the cartridge, and all the elements of shooting worked out, you would relieve him very much ; but if he has to go into experiments with a view to working out the shooting of the arm, of course the cartridge is directly involved in addition to the mechanism of the breech, and you give him a very complicated problem to solve, and it requires a considerable time to do it ; it is very difficult to specify the time.

719. In your opinion would it be fairer and better for the makers that the conditions should be accurately laid down, giving them, as you suggest, the barrel and ammunition, leaving them to their own invention for the rest, rather than giving them the whole arm to make ?—I have not the least doubt of it, and I should very strongly recommend that course to be taken, because there are very few inventors, indeed I know of none, who have all the means at their command for working out that problem.

720. The test you would employ would be a test solely as to the breech mechanism ?—Yes ; and I think that the Government, above all others, is the best prepared for working out the cartridge and the barrel.

721. Suppose, then, that the barrel and ammunition were given, how long do you think it would take to work out the breech mechanism ?—Do you mean simply a specimen of an arm, or a number ?

722. Say four of each of any system ?—Four months I think ought to be enough.

723. Would it require four months ?—I think so.

724. Have you formed any opinion as to which would be the best lubrication for bullets ?—I think pure beeswax will fulfil all the conditions ; that is, to meet all the exigencies of the service, in hot and cold climates, and all the varying circumstances which occur, especially in the British service.

725. Having regard to the shooting qualities alone, would you recommend pure beeswax ?—I think I should with expanding bullets.

726. How do you think the beeswax should be placed ; upon the bullet, in cannelures, or on the paper ?—In cannelures.

727. What is your objection to beeswax lubrication being placed upon the paper ?—Because it is introducing on the bullet an additional and different substance, and you subject yourself, if you use paper wrapped round a bullet in addition to a lubricant, to the variable thickness of that paper. I may say that it is impossible in practice, when ammunition is made by the million, always to have the paper exactly of the same thickness, and when you come to narrow the thing down with a view to obtaining such accurate results in shooting, the combination of the bullet and the barrel becomes so sensitive that even a variation of a little thickness in the paper will affect the result ; and it will do so even in the amount of wax there is on the projectile, for if there is a thousandth or two more wax on the bullet at one time than another it will affect the shooting.

728. Do you see any reason why the shooting from a breech-loader should be inferior to the shooting from a muzzle-loader ?—There is a reason in my mind, and it is this : the difficulty of inserting the bullet into the chamber, which is to be, under any circumstances, slightly larger than the bullet, so that the axis of the bullet is maintained perfectly concentric with the axis of the barrel, whereas when the bullet is put down from the muzzle it is a snug fit, and it is as nearly concentrically centred as it is possible to accomplish in practice. I think that is the chief reason why it is so difficult to obtain as good results in shooting from a breech-loader as from a muzzle-loader.

729. Might it not also be from the fouling in the muzzle-loader being always pushed down, whereas in a breech-loader it accumulates because there is nothing to remove it ?—Of course, in the case of the muzzle-loader, the loading does, to a material extent, carry down with the bullet the residuum of the previous discharge left in the barrel ; but where in a breech-loader you have a proper combination so as to avoid fouling the difference between the two is reduced to a mere nothing ; in other words, where the breech-loader does not foul there is no advantage in respect to loading from the muzzle, in which case the residuum in the barrel is carried down with the bullet.

730. I believe you have turned your attention a good deal to the locks of rifles ?—Yes.

731. Do you consider that the present rifle lock could be simplified ?—Not to be applied to the gun as it is now. I do not think it can be simplified.

732. But in a perfect gun do you consider that the

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present service lock is a good lock for military purposes?—For guns of that class I do.

733. Do you mean of the Snider class?—I mean for guns requiring a lock to be attached to the side. There are guns which have what are called centre-action locks; they are let in through the centre up from the bottom, and others have a lock forming part of the breech action itself, as in my own; it performs all the functions of a lock; but I understand the question to refer to arms requiring a lock to be attached to the side.

734. Do you consider it an objection to an arm if it requires a lock to be fixed at the side, and therefore the complicated lock at present in use?—For a breech-loader carrying cartridges which have their own means of ignition for central fire, I can see no reason for retaining the old side lock, which was devised for a purpose very materially different from what is now required in central firing breech-loaders. I think the desired end can be accomplished in a more direct and more simple manner.

735. With regard to the stocks of rifles, do you see any objection to a divided stock. Can it be made as strong as a stock that runs right down the barrel?—I do not think it is quite so strong as when the stock is in one piece from end to end, and the gun is more pleasant to handle when the metal parts are all embraced in wood.

736. (*Captain Rawlins.*) From any trials that have been made do you think there are any disadvantages in compressed powder?—I have seen no disadvantages yet.

737. Do you know whether it is more liable to cause fouling?—My impression is that the success of my shooting with the ·500 bore rifle was owing to it. I believe I may justly say that my ·500 bore rifle, in which the compressed powder was first fired, was the first ·500 bore rifle with which satisfactory results have been obtained—that is, it did not foul; and I think it was to a very great extent due to the use of compressed powder. The pellet has an aperture extending up its axis nearly entirely through the cylinder of powder, and the flame from the cap passes up through this opening, and ignites the whole charge simultaneously, which is a very desirable object to attain. I think, therefore, that it has a decided advantage over a long column of uncompressed powder in a small-bore.

738. In noticing small-bores that have been foul, have you ever observed where the greater part of the fouling collects?—It is towards the muzzle.

739. Can you account for that in any way?—I do not think that I can satisfactorily account for it. I have never satisfied my own mind on the question; but it has occurred to me that it might be due in a great measure to a portion of the fore end of the column of powder being driven up with the bullet towards the muzzle, and as the bullet leaves the muzzle of the barrel the reaction of the re-entering air into the vacuum stops it there, and prevents its being carried out. I am inclined to think also that there is something in the thickness of the metal in small-bore barrels; they are generally thicker in proportion to the diameter of the bore than in larger bores, and there is less elasticity. I have found even in an Enfield rifle that if a band were screwed too tight fouling would be apt to occur under that band, and I attribute that to the barrel being constrained or held at that particular point, so as to destroy its liberty of expansion at that point.

740. (*Captain Mackinnon.*) You have stated that you liked beeswax to be applied to the bullet in cannelures?—Yes.

741. Do you mean in a bullet that is hollow, or in a solid bullet, would you have it still in cannelures?—Yes, the object of the cannelures is simply to retain the lubricant. I should add to that remark another, which is, that the advantage of cannelures is that they reduce the surface of the lead in contact with the walls of the barrel, and consequently reduce the friction.

742. (*Mr. Ross.*) Do you think it is possible that the fouling towards the muzzle may also be partly caused by insufficient lubrication, and that it becomes exhausted before the bullet has reached the muzzle of the rifle?—That would depend upon some other contingencies. In the case of a rifle in which there is a great amount of twist, there is naturally more friction than where there is less twist, and the possibility of the lubricant becoming removed or absorbed before it reaches the muzzle end of the barrel is increased by that means, that is, by the amount of friction caused by the twist.

743. Do you think that the inferiority in the shooting of the breech-loader, compared with the muzzle-loader, is in some respects due to a loss of power on the first explosion of the powder in expanding the cartridge case to fill the chamber?—I think it has something to do with it.

744. Do you know of any reason why the conditions as to bore, weight and description of bullet, and charge of powder, which are found to answer with the muzzle-loader, should not also hold good with the breech-loader?—You cannot ensure precisely the same conditions in a breech-loader which you can in a muzzle-loader. The difficulty that I referred to a short time back of centring the bullet in the chamber is a difficulty which must always exist in a breech-loader as compared with a muzzle-loader.

745. Do you think that the conditions which are found to answer best with a muzzle-loader might also be best with a breech-loader?—If all the conditions of the muzzle-loader could be applied with equal facility to the breech-loader, I should say that they ought to do as well in the breech-loader as in the muzzle-loader, but I cannot see that all the conditions can be maintained in the breech-loader.

746. I spoke merely as to the size of the bore, the weight and description of bullet, and the charge of powder, not of the chamber. I suppose the same objection would apply that you spoke of, with reference to the chamber, to all sizes of bores?—Yes, so far as the weight of the bullet and the charge of powder are concerned. I should say that irrespectively of the difficulty of centring the bullet in the case of the breech-loader, that equally good results should be obtained from the breech-loader as from the muzzle-loader.

747. The difficulties you have spoken of as to the paper round the bullet not having been experienced with the muzzle-loader, is there any reason why they should be more experienced in the case of the breech-loader?—I have never seen a small-bore rifle yet of materially less calibre than half an inch, even a muzzle-loader, that would go on for any great length of time without fouling.

748. At what distances have you tried the ·500 bore?—At 500 yards.

749. Not beyond that?—No.

750. Have you tried experiments with smaller bores than ·500?—Not myself.

751. (*Earl Spencer.*) Have you noticed the effect of frost on compressed powder?—I have not, but I do not see why it should have any effect.

752. The grains are, I believe, held together by pressure; nothing is used?—Nothing but pressure.

753. Do you think that the compressed powder would bear rough usage in a soldier's pouch?—Yes, much better than the other, and that is one of the advantages of the compressed pellet, the firmness it imparts to the whole cartridge, prevents its becoming deformed; you may throw it almost any distance, and you cannot hurt it because it is so firm.

754. It is protected, I suppose, to some extent by the metallic case?—It is protected of course from moisture, but the metallic case does not impart much strength to it. The principal element of rigidity in this cartridge is the powder pellet itself, and that is one of the advantages that this cartridge would possess over any cartridge for a small-bore with uncompressed powder, that is, its superior powers of endurance under rough usage, and its less liability to become

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deformed and battered, or knocked out of shape by being carried in the soldier's pouch.

755. You spoke just now of the difficulty of boring small bores in steel barrels. Were the Whitworth barrels that were made at Enfield bored by machinery ?—I believe so. I do not know officially how they were done, for I never saw the machinery in operation, but I have had some experience myself in boring steel barrels. I have constructed machinery for that purpose, and I know practically the difficulties to be encountered in the process of boring; as the bore is reduced you increase those difficulties in a much greater ratio than the decrease of the diameter of the bore.

756. With improved machinery do you apprehend that there will eventually be any difficulty in doing it ?—I think it will always exist to some extent.

757. Do you consider that spiral springs are durable ?—I see no reason why they should not be, if they are made of proper material, and by the most approved mode of manufacture.

758. Do you think they could be procured of uniform quality ?—I do.

759. Have you had much experience in the use of spiral springs ?—My personal experience is limited to that which I have derived since I invented my system, No. 2, which is before the Committee ; but I have made diligent enquiry of persons who have used similar springs for other purposes, requiring an equal degree of durability in every respect, and I am informed that there is no difficulty whatever in making a spiral spring which will stand as satisfactorily as any other description of spring. We know that for the last 20 years the Prussian needle-gun has been in existence, and that spiral springs are employed in it for exploding the cartridges. I have never heard any objection urged against the durability of that description of spring as applied to that arm.

760. An objection to the present Government cartridge has been made, that a part of the case overlaps, and in consequence the cartridge is not concentric with the axis of the piece ; do you think there is anything in that ?—You speak of the overlap of the coil ?

761. Yes.—The same idea occurred to me, and in order to prove it, in one of my late experiments with the compressed powder cartridge, it occurred to me that there being a double thickness, around one-fourth of the circumference of the coil, it formed an irregularity that would affect the equal expansion of the bullet, and in order to satisfy myself on the point, I made a diagram inserting the cartridges as nearly as possible in that way (*describing*), so that the lap came always upwards, and I could not see that there was any superior result obtained.

762. (*Chairman.*) Do you know anything about riband springs ?—I have had no practical experience with them.

763. Are they not being used in the same way as spiral springs ?—Yes. I have heard of them being used for similar purposes, but I have never seen them applied to fire-arms.

764. Do you know of any objection to their being used ?—I do not know of any objection as to their durability; of course in a spring of that kind you cannot get the same amount of play, that is, the same amount of contraction and expansion that you can with an ordinary helical spring.

765. Do you see no advantage whatever in the riband spring ?—No.

766. Have you at present barrels made to fire the ½-inch and the ·451 cartridge made of compressed powder ?—Yes, several of ½ inch calibre, but none of ·451 calibre.

767. To which of your breech mechanisms are they fitted ?—No. 2 system. I have two barrels, one with a 36-inch pitch and another with a 42-inch pitch.

768. (*Captain Mackinnon.*) Do you think that a spiral spring is more likely to be affected by sea air ?—I do not see why it should be ; in fact I should scarcely suppose that it would be so much affected, as there is less surface to be acted upon by the salt air in the case of the helical spring.

769. (*Chairman.*) Could not the present side-lock be simplified by doing away with the sear spring ?—You might diminish the number of pieces by one, but there are many locks so made now. I think the side-lock in my No. 1 system has a main spring and sear spring formed of one piece.

770. Is not that cheaper ?—It is slightly cheaper.

771. Is it equally good ?—I think so.

772. You see no objection to it ?—No.

773. How much cheaper do you suppose it would be than an ordinary lock ?—I should say 3*d.* or 4*d.*

774. Will you be so good as to hand in the diagrams you have brought with you ?—Yes (*handing in the same*).

The witness withdrew.

Adjourned till Tuesday next at 11 o'clock.

War Office, Tuesday, 11th February 1868.

PRESENT :

LIEUT.-COLONEL FLETCHER IN THE CHAIR.

Captain RAWLINS.
Captain MACKINNON.
Earl SPENCER, K.G.
E. ROSS, Esq.
Captain HAIG, Secretary.

Colonel MANLEY DIXON, Superintendent of the Royal Small Arms Factories, examined.

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775. (*Chairman.*) With regard to the weight of the rifle do you consider that a weight of 9 lbs. 8 ounces is as good as any for a service arm ?—I think it is too light.

776. At what weight would you prefer to fix it ?—The arm of the service has a very light barrel, and if you are to have small-bores you cannot get them to 9 lbs. 8 ozs. I consider that that is perfectly impossible; that is to say, you cannot reduce the thickness of the metal in proportion to the calibre.

777. What do you think the weight should be, rather more than 9 lbs. 8 ozs. ?—I should say 9 lbs. 8 ozs. without the bayonet.

778. Just so ?—I would say that it has always been my wish, and I proposed it years ago, to put at least 4 ounces more into the barrel of the existing Enfield.

779. Supposing that a smaller bore than the present service bore was adopted, do you think that 9 lbs. 8 ozs. would be too light ?—Do you contemplate reducing the length of the barrel ?

780. Without reducing the length of the barrel at present ?—In your advertisements you allow of 3 inches

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being taken off, but now you recur to the present length. However, taking the present length of the Enfield rifle, I do not think you could get a serviceable arm for that weight with a small-bore.

781. Do you consider that the present length of the barrel is the best with regard to shooting qualities, or would an alteration in your opinion be desirable?—As far as the shooting qualities are concerned I think where the barrel is held correctly the length does not so much signify. I do not think it would detract from the arm shooting if the length were reduced 3 inches or 6 inches; but there is a reason which is rather against the reduction of the length for the soldier, which is, that the nearer you bring the sights together in the arm, the more your error multiplies in the error you make in the aiming from his shoulder, while the greater the distance is between the back sight and the front sight, the less the error multiplies and the less it is in aiming. It would not be shown from the mechanical rest, but from the shoulder you can easily understand that a man having the sights close together, say within two inches of each other, the error would be multiplied very fast by a very small shade of error at the beginning.

782. For pure shooting would a shorter barrel than the present 3 feet 3 inch barrel be equally good in your opinion?—I think so.

783. To attain flatness of trajectory and also accuracy at ranges beyond 500 yards and up to 1,000 yards, what bore do you consider would be the best?—I am at the present time making experiments with Colonel Boxer with the ½-inch bore. We were instructed about two years ago to take up the question of small-bores, but there has been such pressure put upon us that we have not been able until lately to take up that question. I furnished him with one Snider action fitted to four barrels of the same calibre, but with different descriptions of pitch of rifling.

784. Have you tried any of the ·451 bores?—I gave Colonel Boxer two years ago two barrels of ·450 and ·500. I have tried the ·450 and the ·451 as muzzle-loaders, the Westley Richards and the Whitworth arms, but there were difficulties in the way of the ammunition in coming to a very small bore for breech-loaders. At first the ammunition was very long, and there was great difficulty about it, but we finally considered, and I think it was also the idea entertained by the Ordnance Select Committee, for I have heard General Lefroy say so, that the ½-inch bore might be made a good gun, and so we thought we would make it the basis of our trials. Then Colonel Boxer reduced the length of the ammunition, by using compressed powder until he got the cartridge of the same length as the present service cartridge, holding the same quantity of powder and carrying a lighter bullet.

785. Supposing that the difficulty as to the cartridge was got over in regard to its length, which bore do you consider the best, the ·451 or the ·500, to produce lowness of trajectory and accuracy in shooting?—I have not yet had sufficient experience of these calibres to be able to answer that question.

786. But you have had experience I think with regard to the ½-inch bore?—Yes, and as far as that goes, of course by using a bullet of a certain weight, and with a certain weight of powder, the trajectory has been lowered.

787. In comparison with the ·577 bore?—Yes; and therefore it is natural to think that if you went down below that, for instance, to ·451, or to something like the Chassepôt bore, which carries a small bullet of 380 grains with a charge of 85 grains of powder, you would be able to get a very considerable flatness of trajectory. The angle of the ·500 bore is small at 500 yards and the shooting is good, but I cannot say that of the Chassepôt, it is not good. My experiments have shown that there is a limit to the velocity of rotation imparting steadiness to the bullet; the two do not necessarily go together, and it requires a very nice balancing of all these points to get steadiness of shooting and flatness of trajectory.

788. In your own experiments have you principally tried the ·500 bore?—That is what we have made most diagrams with, at the same time we have not gone very far into that question. Colonel Boxer will show the Committee some diagrams which have been made, and they will see how far those indications point to what it may be possible to attain to.

789. Speaking now with regard to the ½-inch bore, what description of rifling do you consider the best?—That is entirely a matter of experiment; it can only be worked out by careful experiment.

790. Have you worked out any of these experiments?—No, I have merely adopted, for the sake of trying what cartridges we could get, and also to get rid of fouling, different pitches of rifling, but adopting the same form of rifling for the four barrels that we use; that is to say, the 5-groove rifling with different pitches, from a 20-inch pitch to a 42-inch pitch.

791. Do you know the Metford rifle?—Yes, from description, but I have not had his gun in my hands.

792. Do you know the Whitworth rifle?—Yes, we have made a large number of them.

793. Do you consider that that system of rifling is applicable to a military arm with the ½-inch bore?—I am afraid not for breech-loaders, and for the cartridge; there would be a difficulty I am afraid. I think that there would be a difficulty in this way, that the angles of that rifling would be a difficult point.

794. Reports have been received, and published, from different regiments as to the performances of the Whitworth rifle as a muzzle-loading arm?—Yes, some of them were sent to India, and others to the Rifle Brigade, three battalions were armed with the Whitworth rifle.

795. Were not the reports very contradictory as to the performances of the Whitworth rifle?—Yes; they were favourable in some places, where perhaps the climate and other circumstances favoured the ammunition, the arm performed better, while in other places it was the reverse. There was one rifle regiment reported that within the last 12 years it had had the misfortune to have six different descriptions of arms, all different from the present rifle, the worst being the Whitworth. The Whitworth caused very great difficulty when it fouled. I think that was found at the Curragh.

796. The principal objection, I believe, was that the fouling caused a difficulty in loading?—Yes.

797. But that difficulty would not occur with a breech-loading arm?—It is impossible to say. To close the angles with a bullet, you must have a great deal of upsetting power in the bullet. The hexagonally formed bullet would make a great difficulty in the ammunition. If it was mechanically fitting you would have to put each cartridge into the chamber so that the angle of the bullet should lie in the angle of the rifling. If you do not do that, but use a cylindrical bullet, the angles are considerable, and rather deep in that rifling, and I think that that would occasion fouling.

798. The objection to the Whitworth rifle was that the fouling was so great as to make the loading difficult, not that it affected the shooting?—It did affect the shooting certainly. The great thing in a military arm is that you shall be able to load and fire as often as possible, with no difficulty. The next element is with as much accuracy as possible.

799. In the reports made upon the Whitworth rifle was not the difficulty in loading the principal objection?—Yes, because that shut up the arm altogether. I consider that that was condemnatory of the arm.

800. On the other hand, some of the reports received were very favourable to that rifle, particularly those from India?—Yes. I have no doubt that they would be favourable from India to the arm on account of the climate. Where the arm suffered most was in extremes of temperature, where there was a great dryness in the atmosphere. I believe that in the Mediterranean it was found to perform tolerably well; at Gibraltar, and also in India, I believe it did very well. But still with regard to reports received from regiments, you must take them just for what they are worth. A soldier goes out and fires perhaps

half-a-dozen rounds, or at all events very few rounds, as compared with the very trying examination and test which an arm gets at our hands.

801. Personally, as I understand, you have not tried the Whitworth system of rifling as a breech-loader?—No.

802. Nor the Metford?—No.

803. Have you ever tried the Lancaster rifle?—Yes, that was tried at first, and the rifling was also tried at my suggestion before we made barrels to give out to the armourer serjeants for repairs. I said there was now a good opportunity to ascertain whether there was any real advantage in the Lancaster rifling, and I suggested that a certain number should be sent to the Ordnance Select Committee. I think there were nine of each of the Lancaster and the 5-groove Enfield rifle. The nine were rifled, having part iron and part steel barrels, by Lancaster, and the results were not satisfactory. To what that was attributable I do not know, but Mr. Lancaster is now in communication with me; we are, in fact, working together. I am making some barrels for him, and he is altering the form of his rifling, and also altering the dimensions of his barrel a little, just to see whether he can find out the form best adapted for the present ammunition of the service.

804. Was the Lancaster arm tried with the present bore of ·577?—Yes.

805. Have you ever tried the Lancaster ½-inch bore rifle?—I have seen his small-bores; that is to say, he has frequently asked me whether I would lend him my range at Enfield, so that he might come there to try them. I have sometimes seen the results, and it appeared to me that it was quite a chance thing when his rifles succeeded.

806. In what respects did they fail?—The failure was simply this, that some of the guns would not shoot at all.

807. Was there a great disparity in the shooting of different guns?—Yes; there were never two the same.

808. Could you at all account for that disparity?—No, I could not. I should say that there must have been some irregularity in the manufacture, or that the system of manufacture was wrong.

809. In your opinion, are the Lancaster rifles difficult to make?—I think the principle is unmechanical. He describes his bore as a cone from the breech to the muzzle, and not a cylinder, and he has two progressions inside. He has a progression in the depth of his rifling from the breech to the muzzle, that is to say, it is deeper at the breech than it is at the muzzle. He has also a progression in the spiral, an increasing spiral towards the muzzle. I think he has had too much work thrown upon his bullet. The bullet has to alter its form the whole way up the barrel in the angles of the rifling, and also in the depth of the grooving.

810. From the observations you have made, suppose you were called upon to make rifles with the ½-inch bore, what system of rifling should you adopt?—I have as yet not had sufficient experience to enable me to say. I am of opinion that the first step which I should expect to be taken would be some determination on the part of some competent authority as to the calibre and total weight of the gun, the length of the gun, and possibly the number of rounds which the soldier should carry. Take those four points. Then I think the next thing should be to place in the hands of myself, as representing the Enfield factory, authority to set to work with the arm, and Colonel Boxer to work on the ammunition, that we could do as we did with the Snider. We could work out the rifling if we were limited to the above points. Something must be fixed; the form of the ammunition and the description of it must be fixed. The service ammunition at the present time, I believe, is generally admitted by all competent men to be about the best in Europe. The principle of that cartridge would be taken, because, if you did not limit it some one might say, "Why not have a cartridge which totally consumes," and another might say, "Have a rim-fire cartridge," so that we should be entirely at sea as we were when we first began.

811. The Committee has fully considered all those points.—No doubt, but these indications must be laid down before we could be called upon to give a fair answer to the question. We could then work within those limits and place the results of our labours in the hands of the Committee, and it would be for them to conduct their own experiments, and to agree or disagree with what we had done. There is no evidence in the country on the military points concerned in the selection of such an arm which I think will be of much value to you as far as the civilian gunmakers are concerned.

812. I believe you have tried experiments up to a certain point with the ½-inch bore?—Yes.

813. From the knowledge you have obtained are you able to state to the Committee what system of rifling you prefer in order to obtain a low trajectory and great accuracy?—Certainly not; but at the same time I am able to say this, that I believe the results, so far as they have been attained with the ·500 bore, are satisfactory, both as to accuracy and lowness of trajectory.

814. Using what system of rifling?—With regard to the system of rifling, as I said before, there are four barrels, with different pitches of rifling, and of course those are intended to represent or to meet the experiments made with different lengths of bullet. The longer bullet takes a quicker pitch in the rifling in the same calibre. Then we wanted to try whether we could do with a shorter bullet, and that requires a less quick pitch with the same calibre. Therefore, although it is the same system as the five-grooves with a certain progression in depth from muzzle to breech, yet you must vary the pitch, or the quickness of the turn as you vary the bullets in length, and consequently in width.

815. Can you tell the Committee with what length of bullet and what description of rifling you obtained the best results with the ½-inch bore?—I can hardly tell you that sufficiently, because with one bullet and with one pitch of rifling you may get better results at one range than at another, and for long ranges a heavier bullet has rather an advantage over a lighter one, and it seems difficult to combine the two, that is to say, to have a light ammunition suitable to give you sufficiently good results at short ranges, and at the same time to shoot well at long ranges. I think that experience points to this, if the Commander-in-Chief or the War Office want to get the best gun for lowness of trajectory, and also lay down that you must shoot at long ranges, and make only a certain mean deviation, there must be two patterns of arms in the service.

816. Do you not think it might point to the necessity of two ammunitions for the same gun?—That is another form of putting it, but I think that that is an inferior mode of solving the problem. I think that generally speaking where you try to make one thing perform two duties, and two duties which are not comparable, you do not get either fulfilled well. I think that two guns in the service would produce the result in the best form, but of course there might be other reasons against it. It might be said, "We must "sink the very best form in order to prevent the con- "fusion which will possibly arise from having two "guns in the service, and two ammunitions."

817. Do you not think it is possible to have two sorts of ammunition to do their work well out of the same gun, one for shorter ranges and the other for longer ranges?—The difficulty, in my opinion, is to control the use of that ammunition.

818. But as a fact could it not be done?—As a fact I think you might do it; for instance, you might take the short Enfield Snider, and there is no mistake now that there is one ammunition, the heavy one, which shoots almost to perfection out of that gun, and that is No. 2 cartridge.

819. At what range?—It shoots well up to 1,000 yards; that is, for a military gun. I do not say that

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it is a match rifle. I believe that the gun would make an average of about 3 feet 6 to 4 feet mean deviation at 1,000 yards, as a rule, and I think it would make at 500 yards, with a heavy bullet, a mean deviation of about 12 inches. I think if you were to use another ammunition, a lighter one, you would not get such good results, but they might be sufficient for ordinary ranges, and for long ranges you might use the other.

820. With lighter ammunition used up to 400 yards you would get a flatter trajectory than with heavier ammunition?—Yes, with the present calibre of the service. If you kept to the same weight of powder and only reduced the bullet.

821. Would you do so with the same bore?—Yes.

822. Is there any military objection to a small-bore because of the size of the bullet?—If you go beyond a certain point, I think there is.

823. Say ·451?—·451 would do its work, if it hit a man in a vital part, as well as a large bullet. Of course there is a greater chance of a small bullet missing a vital part, and I believe, as I have been told by a man who has shot in the Western prairies, that he never uses a small bore for large game, because if you do not hit the game in a vital part it is of no use. They say that the shock is tantamount to something, but a small bullet has been found to fail in this respect.

824. In ordering barrels to be made, the first step I suppose would be to determine the length of the cartridge?—Yes, if you could do it. The length would depend upon the quantity of powder used and the weight of the bullet; you might like a bullet instead of being 380 grains to be 440 grains. The question I think involves an immense amount of alterations, and different points to be investigated; there are the barrels, chambers of different lengths, cartridges of different lengths and of different sizes, all these matters can be best worked out by the means and appliances which I possess on the one hand and Colonel Boxer on the other; and if the question of the $\frac{1}{2}$-inch calibre was settled, and that was taken as the calibre, and we wanted to get thoroughly to the bottom of it, to see whether you could trust to it, and to the ammunition made for it, that it should not foul, and you wanted the best form of rifling for the barrel, and you say, we will start with the principle of the present cartridge made of compressed powder, and you put that into the hands of myself and Colonel Boxer, of course you will get to the bottom of the value of the $\frac{1}{2}$-inch as a military gun and the cartridge too, leaving the other questions as to the best form of breech mechanism for other experiments to determine.

825. How long would it take you at Enfield to make barrels, if the calibre, the size of the chamber, and the description of rifling were given you?—In 14 days any number of barrels for experimental purposes could be made.

826. Have you formed any opinion as to cartridges and the weight of the bullet?—I think Colonel Boxer will be better able to show the Committee what he has been doing; he will show you the minimum weight that he has tried.

827. Do you think it would be possible to obtain a more simple and equally efficient form of lock than the ordinary side lock which is now used?—There is nothing complicated in that lock; it is very simple to make, and the action of it is pleasant to the hand. All the parts have been made with successive improvements for many years past.

828. Do you not think that by adopting a perfectly different principle, a more simple and cheaper lock might be made something similar to the lock of the Chassepôt or the Burton No. 2 system, or that of Carter and Edwards?—It is not a lock, it is merely a spring and a catch as with bolt guns. The present lock gives you at once an indication by the position of the hammer whether you are at half cock or full cock, but with bolt guns you do not get that indication, or not so well. As far as it goes, I think it is an advantage. I am not prepared to say that you may not do something to simplify the lock. There is the Martini gun, and that looks to me as simple as anything you can possibly have. I have only casually looked at that gun, in examining it for the cost of manufacture. I stripped every one of the nine guns and examined every single part with reference to the cost of manufacture, and one could not help being struck by the great differences there were between the complexity of some and the comparative simplicity of others. Some which had no lock of the present form were nevertheless more expensive in their construction.

829. Do you know of any objection to the bolt system when applied to breech mechanism, as compared with the block system?—I think the block system is the safest.

830. In what particulars is it the safest?—The block system requires that in loading you should put the cartridge home with your thumb before you can close the block, and therefore you never run the chance of the block striking the cartridge if you happen to have a defective one, which you might have, and a blow at its base might fire the cap. With the bolt system I think you are never free from that danger. There is the Cowper gun, a bolt gun. I shot with it in Birmingham, when it was first brought out, and I rather liked it. I showed it to a Turkish colonel who was with me, and I said that it appeared to me to be a good gun, but with this arm there was an unfortunate accident from the cartridge exploding on loading, and the inventor has changed his system since. I know most of the gunmakers in Birmingham, and I believe that one and all of them have objections to the bolt system for the reason I have given. The block system is the one which is preferred.

831. Would that include the one made on the Peabody and Martini principle?—Yes.

832. Have you made any experiments in shooting with self-consuming cartridges?—To a limited extent with the Chassepôt and considerably with the Westley Richards. We had to make a large number of that pattern arm at Enfield, but the cartridge failed in cold weather.

833. Why was the Westley Richards cartridge a failure in cold weather?—The paper and the composition which he puts round his cartridge is the difficulty; until the barrel warms up it sticks to the sides of the barrel and prevents the cartridge from going in. His ammunition is made with very great care, that is to say, it requires a very nice fit with his chamber. We had more difficulty in settling the dimensions of the chamber of the Westley Richards carbine, and it was a more troublesome gun to make than any gun we ever made, and then the ammunition gave us the finishing touch to the whole thing. We never could fire with it in cold weather until the barrel got warm.

834. Is it your opinion that guns in which self-consuming cartridges are to be used are not so applicable for military purposes as guns made for the metal base cartridge?—I do not think that any one of them of present patterns represents what we should call a serviceable cartridge. I have a Chassepôt which was lent to me by one of the manufacturers with some of the cartridges, and I went through a series of experiments with the gun, but the cartridges failed, there were continual miss-fires, a difficulty in loading, and bad shooting.

835. (*Earl Spencer.*) What do you consider is the principal cause of fouling in a rifle?—I think that one cause is perhaps inequality in the composition of the gunpowder. At times we find some gunpowder foul more than other kinds, and in trying that question, we found that it depended a good deal upon the specific gravity of the powder. Another cause of fouling, I think, is the particular construction of the gun, allowing of the escape of gas before the bullet upsets into the grooving, and of course there is another reason, which will very largely enter into the question; that is, the dryness of the atmosphere. In registering the hygrometrical condition of the atmosphere by the wet and dry bulb thermometer, we find that when there is a considerable difference, say up to 6°, and particularly in the

case of the Whitworth, it is of no use going on shooting. You require to have a certain amount of humidity in the atmosphere to moisten the results of the combustion of the gunpowder. You must keep it in a somewhat deliquescent state to enable you to go on, but in a very dry condition of the atmosphere, and when a north-easterly wind is blowing, all the small-bores, muzzle-loaders, fail in their shooting from fouling.

836. How do you account for it, that in India, where the climate is very dry, they succeed?—I do not know whether the dryness of the climate in India is combined with the peculiar effect that is produced by a north-easterly wind drying up everything in the way we have it in England. I suppose the climate of India is naturally at all times, or at all events in the summer time, tolerably dry, but when I say dry there, I do not know what amount of humidity there is in the atmosphere, or whether they have in India that dryness that we have with north-easterly winds.

837. The fouling increases I think in proportion as you lessen the bore with a muzzle-loader?—Always, as a rule.

838. Do you think that the rifling has much to do with the fouling?—I think that one system of rifling, for instance the deep angles of the Whitworth, rather tended to produce more fouling than the Enfield system or than the Lancaster system. I think, with a small-bore, that the Lancaster system showed less fouling once when it was tried before the Committee in 1863 than any gun that was tried with a small-bore.

839. Do you think the length of cartridge in a small-bore which is necessary for the powder has anything to do with it?—I think so. I think it influences the fouling of the powder and it prevents complete combustion. Then there is also the larger cooling surface of the barrel which is presented. I think that the quicker the powder is burned the less fouling there will be. I believe that Colonel Boxer will tell the Committee that with compressed powder, where you get it completely burned, there is a total absence of fouling.

840. If the compressed powder system answers, that will be something in favour of the small-bore?—Certainly; that has got over a great difficulty, which was the length of the cartridge for a small-bore. Up to this time there has been a total absence of fouling in the small-bore breech-loader under trial.

841. Is the rifling in the Westley Richards and in the Whitworth very nearly the same?—Yes, only one has eight grooves and the other six.

842. There has been no very serious drawback in the Westley Richards on account of fouling?—No; not with the breech-loader. The principal difficulty in that arm is found is cold weather, or in very dry weather, and that is in loading for the first eight or nine rounds, but when the barrel gets warm then you can load. But in the case of a soldier, who would fire perhaps a few rounds and then stop, there would be considerable difficulty.

843. How do you account for the difference, the one fouling as you say very badly in some cases and the other not?—One is a breech-loader and the other a muzzle-loader. Mr. Westley Richards got over the difficulty by driving his bullet through the barrel and getting it to the bottom of the grooves each time.

844. Do you think the same difficulty would apply to the Whitworth breech-loader as to the muzzle-loader?—Perhaps not. The principal difficulty that I should anticipate would be from the cartridge; if you had a cylindrical bullet you would have a chance of not upsetting into those deep angles and so cleaning them out, whereas if you had a hexagonal bullet you would have a difficulty in getting into the chamber each time so as to enter the angles of the grooves; I daresay that the breech-loading would help you considerably over the difficulty of fouling which you meet with in small-bores in muzzle-loaders. I have always agreed with Mr. Westley Richards on that point.

845. Do you prefer forcing the bullet into the barrel or expanding it into the grooves?—The less work a bullet has to do the better, and the more simple the arrangement for getting a certain initial velocity, which means a low trajectory. If you force the bullet through the barrel that means a high charge of powder relatively to the bullet, so as to keep up the velocity to a certain point.

846. Does the expansion of the bullet take place in the chamber before it enters the barrel in all cases?—The upsetting of the bullet takes place, I think, almost instantaneously after the first blow.

847. If you use a bullet that will go down the barrel, is it not in a sense forced through by being upset in the chamber beforehand?—Yes, it is a little larger. It gets to the bottom of the grooving by forcing through.

848. So that the bullet when it enters is still smaller?—It to a certain extent, as it is termed, slugs through It upsets in the chamber, and is afterwards forced slightly through the grooves. You have the whole of the inertia of the bullet to resist, but when it is once moved, and it leaves a space behind, of course then you cannot expect that it will be doing more work laterally.

849. It has been stated by a previous witness that the greatest expansion takes place about six inches from the chamber. Do you think that possible?—I do not know how it could be proved. I believe the expansion takes place with the first blow.

850. Could it not be ascertained by cutting the barrel into different lengths, and by seeing whether the bullet was marked with the grooving?—That might be tried. Mr. Metford, I believe, holds that the expansion is gradual. He thinks that all the expansion does not take place on the instant. My argument is this, that the bullet has the whole of its weight or the *vis inertia* to meet the first blow, and therefore it is in a better position then to expand than it is directly after it is moved. When it is once moved I think you can hardly depend upon much expansion.

851. What has been your experience with regard to an increasing or uniform twist in rifles?—I have not had much experience except so far as the Lancaster rifle is concerned. The increasing pitch, I think, first of all was adopted in France—the increasing spiral—but the French gave it up. It was then taken up in America, but there it was given up. Then Mr. Lancaster took to it, for this reason, and I believe the only one was that there is less recoil with it. As a matter of theory, to suppose that a bullet should take up its angle of rifling gradually, and not at first. I have no doubt that the original idea was that the first jump of the bullet would drive it straight out, and that it would not take the grooves. I have no doubt in my own mind—and I believe that that first caused the principle to be tried—the idea that the bullet would strip, and not at first enter a quick pitch, and in order to prevent stripping, and to ensure the bullet taking the grooving, it was arranged so that it should be presented very gradually to the bullet. But the objection to that system, I think, is the constant alteration of the form of the bullet all the way up, and thereby throwing so much work upon the bullet to do. I do not see any advantage in it. All our guns with the Enfield rifling have always held their own with the Lancaster rifling at a certain distance. It is a singular fact that up to about 500 yards the Enfield is always at the least equal, I may say, to the best of the Lancaster shooting of that calibre, and more regular; but beyond that, the Lancaster has a considerable pull over the Enfield rifle, because it has a quicker pitch at the muzzle, and therefore the bullet has greater steadiness imparted to it, and it is enabled to reach a greater distance more accurately than from the Enfield rifle.

852. Is there not more work thrown on the bullet upon the Lancaster system than upon the Metford system?—I think there is. The Metford system is a complicated one. It is a very high-gauged bullet. It fits very closely, and it is only, I think, adapted for match purposes. It requires careful loading and careful lubrication, and it takes comparatively speaking a heavy charge, compared with what we use. I am

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speaking of a muzzle-loader, and with that gun he has done great things.

853. Do you see any reason why you should not get as good shooting out of a breech-loader as out of a muzzle-loader?—I used to think it would be a very difficult thing to do, but that was from the fear one had of the impossibility of ensuring constant results from the ammunition. I used to be afraid that one could not always depend upon the action of the ammunition in a breech-loader. But I do not see now, with the experience that we have had, and the way in which the ammunition is made, and the results of the last two years—certainly the results of the last year in the hands of the soldier—and considering the excellent reports which have been sent out of the shooting made, which is from 25 to 50 per cent. better than they made before, I do not see any reason why one should now adhere to that opinion, or that there should be any greater difficulty in getting uniform results.

854. Especially with the metallic cartridge?—Yes, the only one that I know is the metallic cartridge. I think that that really must be the ammunition. I do not know of any cartridge that has at all approached that.

855. I suppose the first objection was to the escape of gas, which is probably now got over?—Yes.

856. Do you think there is any objection to the loss of power in the expansion of the cartridge case, which does not apply in the case of the muzzle-loader?—Whatever results there are are constant and uniform. Supposing you had a result of a certain loss, it would be a definite one and a constant one, and therefore you would have uniformity in your results.

857. Just so; but that would be in favour of the muzzle-loader, would it not?—Yes; it is a fine point that, but it might be in favour of the muzzle-loader.

858. You have stated that there was a difficulty in making a Lancaster rifle with uniform shooting qualities?—We never made them ourselves; they have always been made by the trade. They are a patent invention, and only one corps has been armed with them.

859. Are the barrels made by machinery?—Yes, in the ordinary way in which all barrels are made; they are rolled and bored by regular boring-bits, and then two grooves are cut in them—for it has two grooves—the guide-bar is made to represent the particular pitch, and the increase of that pitch from the breech to the muzzle, and the depth of it, is given by the particular shape of the cutter and screw, and that is done in the rifling machine. But when the two grooves are cut, what I call the unmechanical part of his arrangement is this, he has first a cylinder—a ·577 cylinder—all the way down, and then he cuts his two grooves. Then he puts in a leading tool, which is a piece of copper, with emery and lead, the emery being over the lead, and then he travels it for a quarter of an hour or half an hour up and down the bore, in order to bring the edges of the cut left by the grooves into correspondence with the lands, so as to lose the effect of the grooves, and run the angles of them into the lands. Now, we never allow a barrel, after it has once been made, to be touched in that way, because we should lose all truth in the cylinder, and, in fact, there would not be an inch of truth in the barrel.

860. Could not that operation be performed by machinery?—I am afraid not. The scrubbing would be more or less according to the quantity of emery on the lead, and the size of the lead, and it is very difficult to control that. Then there is another point. He opens out the rear of his barrel in order to make it a cone, so that he takes out all the cylinder there, and it becomes for about 10 inches considerably larger than further up the barrel. He has I do not know how many dimensions; ·580 runs up for some 10 inches, and then it fines down to the muzzle, and you only get ·577, so that in point of fact you have no truth whatever. I therefore consider it unmechanical. When we had a contract for about 5,000 of his arms in Birmingham, I was obliged to shoot every one of them as part of the view. You could not tell what the result was except by shooting them. It is very troublesome and an unfortunate thing where a system is presented which throws you into such difficulties and uncertainty in the manufacture.

861. Would the same objection hold if you had the necessary machinery and you made them under your own superintendence?—I think you never could overcome the difficulty if this system of freeing and coning is to be pursued; there is no way of viewing the barrel after it has left the machine.

862. Are the arms which are issued by the Royal Engineers all selected arms, and viewed in that way?—They are viewed like all other arms, but then we have to shoot every one of Lancaster's.

863. Are there more of them rejected than of other arms which are commonly ordered?—Whenever we met with one that would not shoot I returned it to Mr. Lancaster, or to the manufacturer who made it. He altered it or fitted a new barrel in, and then we had to fire it over again. There are two systems of rifling in use in the service, one for the Engineers and one for other troops. There are positively, in my opinion, very great disadvantages in the system, even supposing the two guns to be equal, where there is a disadvantage in the point of manufacture. On the one hand, I can depend upon the rifling in my rifling machines, and upon my boring. I can also depend upon what I call the viewing of the barrel, in order to determine straightness and accuracy, and without being obliged to shoot every barrel. If we were making, for example, 2,000 a week, it would be quite impossible to do it.

864. Have you made any of the Westley Richards' carbines?—Yes, we have made 20,000 of them.

865. Have you not found the same objections to them in the manufacture?—No. There is a cylinder and there is no freeing; it is merely cutting the grooves in a true cylinder, and so with the Whitworth.

866. Do you think that spiral springs will stand wear and tear in military service?—I was afraid, when we had them out first in Canada, that we might find them go frequently; in cold climates the springs sometimes go, but that has not been the case. When we sent out the first batch of arms in 1866 to Canada, and the first 10,000 that were made were sent there, I proposed that one of my head viewers should go out with them in order to superintend the distribution of the arms in Canada, and that he should remain at the disposal of the general commanding to instruct the different regimental instructors, and be on the spot to remedy any little defects that might be discovered, because everything was new. This man was kept there for 14 months, and he was there during a winter, and on his return his report to me was that everything had proved most satisfactory, and upon the point referred to, namely, the action of the springs, I questioned him most particularly, and he stated that there had been no difficulty whatever. I was, of course, very much gratified to find that the whole thing had worked so well as it had done, because that arm had been hastily got up, and I expected many difficulties to occur.

867. Probably the same observation would apply to the larger spiral springs which are used in the bolt system?—I think they could be made to stand with good metal that had been tempered properly, but the government gun springs are such trifles they can be easily replaced. They do not cost above a halfpenny a piece. A soldier has the means of taking out the piston, putting a spring on and putting it back again. It is an operation that does not take half a minute to perform; therefore, supposing these springs had been found to go, there was a ready means of replacing them.

868. You spoke just now of the Cowper rifle. Did you notice the lock of that rifle well?—It is a bolt gun. I did not take it to pieces, but I had it once to fire, and I thought it worked pleasantly, firing out of it the Boxer cartridge, that I was rather taken with the gun. I was sorry to hear of the accident which occurred afterwards with it at Wimbledon. I have been particularly asked to look at some bolt guns

by Mr. Macdougal, for public purposes in Canada. They are looking for a new gun now with which to arm their militia, and funds are being set aside to purchase arms. He asked me my opinion, seeing that the government were ready to purchase them, and he appeared to be in favour of some form of bolt gun.

869. Have they not adopted in Canada some of the American arms?—They have bought some of Peabody's guns, but only a small number. I think they wanted to adopt one of Carter and Edwards's if it was likely to work.

870. Do you know whether they were satisfied with Peabody's rifle?—I do not think they are satisfied with it; the American government was not satisfied with it.

871. Have there been any official reports made on those arms?—Most of the American arms presented to our government for trial have been reported upon by committees of American officers.

872. (*Mr. Ross.*) Do you know of any difficulty in manufacturing small-bore barrels in boring them?—No; we have manufactured the smallest bore known in the English service. We have made 9,000 Whitworths and 20,000 of Westley Richards of ·451 and ·450 bore.

873. Did you find no difficulty in the boring?—Not the slightest.

874. Have you seen the Whitworth rifle fired with hexagonal and cylindrical bullets?—Yes, frequently.

875. Did you have the best results from the hexagonal bullets?—Yes, at long ranges, with 85 grains of powder.

876. Can you state approximately what the expense of altering the machinery at Enfield for the manufacture of a new arm would be, taking, for instance, one of those arms that you saw the other day?—For all the parts—it will depend of course upon the arm—but for any service arm that you might propose I do not think that it would cost at the outside more than 6,000*l.* to alter the machines, which means of course to make new tools and fixtures; there would be no trouble whatever in that, and any arm that might be chosen could be made. It would be merely a question at first starting of greater or less alterations to the existing fixtures and tools. One arm would probably be more costly than others; but with the means which the government possesses at Enfield anything could done as to manufacture. I think the Westley Richards was the most difficult gun to make, because there was not a single screw or spring or part of the gun that was similar to anything that we had ever made before.

877. (*Chairman.*) Was it more difficult to make than the Lancaster rifle?—The only difficulty with the Lancaster is the inside of the gun, but in the Westley Richards the stock, the lock, and every part of it was different; still it was only the first difficulty of making new fixtures and altering the tools, gauges, &c.

878. (*Mr. Ross.*) Do you know of any reason why the conditions as to the bore, the weight of bullet, and the charge of powder, which are found to answer best with the muzzle-loader, should not also hold good with the breech-loader?—It is a matter of experiment all that, because the whole of the conditions are so altered you have hardly anything to guide you. As a general rule and within certain limits I do not see why you should not get much about the same results. The way in which the powder is inflamed is different; you get the whole effect of the powder because the bullet fits the barrel better; you have nothing between the barrel and it, no paper, and with a proper lubricant the results ought to be at least as good.

879. (*Captain Mackinnon.*) You have stated that when the matter was confided to you and to Colonel Boxer about trying experiments with the small-bore, you decided upon commencing with the ½-inch in preference to a smaller one. Was your reason for doing so the length of the cartridge only?—I think it was rather more than that—it was more an arbitrary reason—it was more I think because we had heard the Committee express rather an approval of the ½-inch bore.

880. In a manufacturing point of view, is polygonal rifling easier to make with reference to the curve of the grooving than the Enfield system?—In polygonal rifling, as far as a single cut is concerned, there is not much difference, but of course when you get to a Whitworth with six cuts instead of three, and you have to go over each cut 12 or 14 times, the time and cost become greater.

881. Also in viewing I suppose?—No; there is no difficulty in that.

882. If divided stocks as in the American guns could be made sufficiently strong for military purposes, would not they be advantageous on account of price?—Very little I think.

883. Would you not require a larger piece of wood to make a long stock, whereas a divided stock might be made of two smaller pieces?—I do not think there would be any economy in making stocks of two pieces. If we were to ask for two pieces they would cut them out of the best parts, and you would have to get the stock equally solid to the stock now in use, and finish it up. I see no economy in it. It would probably be necessary to divide the stock into two parts after it had been machined and operated upon as a single piece.

884. Would you prefer steel barrels to wrought-iron barrels for a military weapon?—What is called steel now is the metal that was first used by Mr. Whitworth, and was made by Messrs. Firth of Sheffield. It is a peculiar metal, with more of the characteristics of iron in it, like homogeneous metal, than of steel. I think that at the present time that it is so available, and I think preferable, because you have a stronger and harder material, and the barrel can be made by drilling out of the solid without employing heat for rolling and welding. In making an iron barrel there is a lump which is welded on, and we cannot weld with that steel.

885. I did not refer in my question so much to manufacturing advantages as to the rough usage it might receive?—I hope it will prove a very superior metal for that purpose.

886. If hardened bullets were used, do you believe that they would wear away the grooving very much more than leaden bullets?—How would you get the expansion?

887. They would be upset.—I think you would not get them to upset sufficiently; not hardened bullets.

888. (*Capt. Rawlins.*) Metford uses bullets which are slightly hardened?—You might have a very little tin or zinc sufficient to make a bullet a little harder, but if you had more than that you would have great difficulty in getting expansion from hard bullets.

889. In a small-bore is a cavity at the base of the bullet necessary in order to ensure expansion?—Unquestionably we could never get good shooting with solid bullets, not in our experiments with the Snider, but in a muzzle-loader the length of the bullet suffices to ensure its upsetting sufficiently without a cavity at the base.

890. Would a steel barrel be stronger than the present service barrel?—From its greater hardness I think it will resist rough usage and wear and tear better.

891. Could a barrel be made for a small-bore of the same weight as the present service arm?—I think there are other circumstances to be taken into account. You might make a barrel for certain purposes of a strength to resist the impact of percussive effect of a charge of gunpowder, but you must reduce the metal very considerably, and what do you come to then? to a small barrel, with such a section that you might possibly be able with an external blow to bend it very easily. Then again you would find it difficult to fit a bayonet on it; if you reduce the thickness of the metal on a small-bore round the bore in comparison with the thickness of the metal in the Enfield rifle, you can easily imagine that the barrel would be too small externally for service purposes.

892. Would it be necessary to do that in order to bring it to the same weight as the present service

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arm ?—Not quite so, but it would be very much the same thing. All small-bores of the service are heavier because you cannot reduce the thickness of the metal in proportion to the bore. Whitworth made his rifle a pound heavier in the barrel.

893. In a military point of view, do you think the present length of the barrel might be altered with advantage ?—There are various views entertained upon that point; it depends entirely upon the view one might take, and each individual who considered the matter might take a different view as to the necessity of using arms so long.

894. Have you seen much of magazine arms ?—I have seen the Spencer repeating rifle, and the Henry with the cartridges lying up and down the stock. I have had some experience of the Spencer.

895. Do you think it would be very difficult to manufacture such arms ? — All magazine arms of course have more mechanical contrivances about them, and of course they would be more difficult. They would involve a large number of parts to be made and larger plant of machinery to be used in making them, and generally speaking those parts require to be made very exact in order to work well. I think that they would be much more difficult to make.

896. When speaking of the Whitworth rifle, do you think that the fouling which takes place is due to the arm or to the ammunition principally ?—In answering that question I might say this, that the arm did foul with the ammunition used; but by the adoption, first of the loading rod, the mechanical one, and so clearing the gun out each time, he got rid of the fouling, and afterwards by improving the ammunition and putting a little metal disc at the end of the base of the bullet, he obtained the same result by what you might say was an improvement in the ammunition, not in the powder or the bullet, but by a mechanical arrangement being added at the end of the bullet in the barrel. You may say that by an improvement in the ammunition he got rid considerably of the fouling.

897. Have you got any breech-loaders of the bore ·451 or ½-inch at Enfield now ?—No, I have not made half a dozen of them. I think they are all down at Woolwich. I made them for the purpose of conducting experiments, and all that is done down at Woolwich. I have sent them to Colonel Boxer.

898. When you stated that it would take three or four months to do what was required, did you mean also to carry out experiments ?—Yes.

899. Supposing that a given barrel and a given breech mechanism were supplied, and you had merely to attach them together and make the gun shoot, I suppose that that would not take so long ?—No; but what I said was this, that to ring all the changes which might be imagined upon a certain calibre by altering the ammunition, the quantity of powder to be used, the relation of the projectile to the bore, the shape of it, the description of rifling, and all those things would involve to one breech mechanism perhaps 20 or 30 different barrels.

900. But if you had one breech mechanism given, and a barrel given, and you had merely to attach them together, that would not take long ?—That would be only a five minutes' operation; that is nothing; that is merely the mechanical part, but putting other barrels into a breech mechanism to conduct any series of experiments with is what takes up the time.

901. (*Chairman.*) When the Whitworth rifles were tried had they hexagonal or cylindrical bullets ? — There was a store of both, but I rather think that only the cylindrical bullets were issued. I am not quite sure, but some of the rifles were sent to New Zealand and some hexagonal bullets were I believe sent with the other ammunition.

902. Do you consider divided stocks would be strong enough for military purposes ?—I do not like the mode of attachment much, and I cannot say, from want of experience with such stocks, how far they would knock about; the only real trial is the service trial in the hands of the soldier, with constant bumping and ramming into the arm racks, to see whether that will not disturb the mode of attachment. I should be afraid that it would.

903. (*Earl Spencer.*) Do you know whether metallic wads have been issued to the troops ?—Never; it is quite a recent thing with the Whitworth rifle. I think it has been within the last year and a half; there is first the wad and then a metallic washer attached to the base of the bullet.

The witness withdrew.

Col. E. M. Boxer.

Colonel E. M. Boxer examined.

904. (*Chairman.*) You are superintendent of the Royal Laboratory at Woolwich ?—Yes.

905. Supposing that any experiments were required with regard to a new description of arm not determined upon, which do you think would be the first requisite, to fix the ammunition, barrel, or the breech mechanism ?—In a breech-loading arm I think the first thing to be determined upon is the cartridge case. In a breech-loading arm the cartridge case is a very essential portion of the arm itself.

906–7. From your experience do you think that by far the best kind of arm is that which requires a metal-base cartridge rather than a self-consuming cartridge ?—Certainly; it has very great advantages over an arm which is used with a self-consuming cartridge. There are three serious defects in the system of self-consuming cartridges.

908. Will you be kind enough to mention the advantages which an arm using the metal-base cartridge has over others ?—None of the self-consuming cartridges which I have seen are sufficiently strong to withstand the rough usage they are likely to meet with in the soldier's pouch, or in the hands of the soldier. To make them strong enough, it is necessary to enclose each cartridge in a strong covering, something on the same plan as that which was adopted for the Westley Richards ammunition, and also for the Whitworth ammunition. Then if you have this covering you sacrifice one of the most important advantages of the breech-loader over the muzzle-loader, namely, quickness of fire. Secondly, with all the self-consuming cartridges that I have seen, if you have a miss-fire it is necessary to use the ramrod to get the cartridge out. Thirdly, if you did not open the breech block before you used the ramrod the chances are that you have an explosion of the cartridge when the soldier is in the act of ramming down. I think that these are the three principal objections to the system of breech-loading, with the self-consuming cartridge.

909. Are there not other objections, such, for instance, as the impossibility of perfectly closing the breech without the help of the cartridge ?—I think that the Westley Richards' system is a very good one in that respect, so far as my experience goes. I think that it ensures at all times a perfect closing at the breech, so as to prevent the escape of gas.

910. With regard to protecting self-consuming cartridges when carried in the soldier's pouch, do you know how the Prussians and the French overcome that difficulty ?—I do not.

911. I think you stated that in a new arm one of the first things, with reference to the metal cartridge fitting the arm, was to determine the construction of the cartridge case ?—Yes.

912. For what reason do you make that one of the first requisites; is it because it affects the chambering of the rifle ?—It affects the rifle altogether, both the breech-loading arrangement, and the chambering of the rifle.

913. Have you seen breech-loading rifles tried of smaller bore than the present service arm ?—Yes, I have made experiments in conjunction with Colonel

Dixon with arms of smaller bore than the service arm.

914. What bores have those been?—We made a few experiments with the ·450 bore, but not very many; we have made a considerable number of experiments with the ½-inch bore.

915. With which bore did you get the best shooting together with flatness of trajectory and accuracy at long ranges—with the ·450 or the ·500 bore?—My experiments have been so limited with the ·450 bore that I cannot give you a decided opinion. I cannot say that the ·500 bore is better or worse than the other. My impression is, from the limited number of trials I have made, that there will be more difficulty with the ·451 bore than with the ·500 bore; that is to say, more difficulty if the requirements of the service are such as I think they ought to be. If you give up certain important requirements with reference to the arms and the ammunition, it is most probable that a ·450 bore will be found better than a ·500 bore.

916. That is, better with regard to lowness of trajectory and accuracy?—Accuracy in respect to what?

917. Accuracy from 500 to 1,000 yards, and lowness of trajectory up to 500 yards. Do you think in these respects that you will get an improvement in the ·500 bore over the ·451 bore?—If the arms are in both cases perfectly clean, and you are firing only a few rounds, I have little doubt that you would get more accurate shooting from the ·451 bore than from the ·500 bore, at ranges beyond 800 yards.

918. What are your objections to the ·451 bore, as compared with the ·500 bore?—I have no objections to it, but my impression is that there would be greater difficulty in making ammunition for an arm of ·451 bore—that is, ammunition to fulfil all the requirements of the service, according to my ideas—than with the ·500 bore. I think there would be more difficulty in getting ammunition which would not foul after a certain number of rounds had been fired, or to get an ammunition that would shoot well when the rifle is dirty or rusty, or in such a condition as you would most likely have the majority of arms in a campaign.

919. Do you consider that the fouling of an arm depends upon the ammunition? You say that there would be more difficulty with the ·451 bore than with the ·500 bore. Does it arise from the ammunition?—To a great extent it does.

920. In what way would the ammunition in the ·451 bore tend to increase the fouling more than in the other?—We only know from experience that it is so, and that there is more difficulty in preventing fouling. In my experiments I have been able to overcome fouling altogether in the ·500 bore, but not in the ·450.

921. Do you think it may be that the fouling depends upon the bore rather than upon the ammunition for the bore?—I think it would depend, to some extent, on the mode of rifling, and upon the twist in a very small bore. In the ·451 bore you are obliged to have a much more rapid twist than in the ·500 bore; and as you decrease the calibre you must increase the length of the bullet, and consequently increase the rotation. If you increase the rotation—that is to say, if you increase the pitch of the rifling—you get into the difficulty of fouling.

922. You think that the fouling is caused greatly by the increase of twist?—I think so.

923. I believe you have made many experiments lately with cartridges made of compressed powder?—Yes.

924. Do you find the compressed powder answer for a military cartridge?—I have made a great number of experiments with the ½-inch bore, and with that it answered perfectly well.

925. Have you made any experiments with the ·451 bore with compressed powder?—Yes, I have made a few, but very few indeed—not a sufficient number to enable me to give an opinion about the application of the compressed charge. I have no doubt that it would answer perfectly well in the ·451 bore as well as in the ·500 bore, as far as powder fouling is concerned.

926. Therefore, as to the ammunition causing fouling, there would be no greater difficulty with the ·451 bore than with the ·500 bore?—Yes, certainly there would; because the ammunition includes the bullet, and it is the bullet which fouls the piece as well as the powder; it is the combined action of the two. But of course I wish it to be understood that I have not made a sufficient number of experiments with the ·451 bore to be able to give a decided opinion.

927. With regard to the ·500 bore, are you able by using compressed powder to make much shorter cartridges?—Much shorter cartridges; not a cartridge shorter than the present ammunition for the ·577 bore, but we make a shorter cartridge, much shorter than the ·500 bore cartridge filled with the ordinary powder.

928. Referring to the cartridge made of compressed powder for the ·500 bore, what proportionate length would it have compared with the present length of the cartridge for the ·577 bore?—I think the cartridges are about the same length.

929. What would be the proportionate strength of the compressed powder as compared with the ordinary powder?—I have found that about 2¼ drachms of compressed powder are equivalent to 2½ drachms of ordinary powder, with respect to the velocity of the bullet.

930. Therefore it is by diminishing the quantity of powder that you get a shorter cartridge?—In the cartridge I am speaking of as being of the same length as the service cartridge there are 2½ drachms in the charge, and therefore the strength of the charge in that small-bore cartridge is greater than that in the ·577 bore. During the last week I made experiments with a charge of 75 grains of compressed powder, and I found an advantage in the increased charge; the charges of the ·500 bore cartridge which I have experimented with are greater than those in the service cartridge.

931. The charges are greater, and yet the length is the same?—Yes.

932. Is that by compressing the powder?—Yes, I compress it about one-third. When I first started with the compressed powder, I laid it down as a necessary condition that the cartridge should be so firm, that you might hammer it in the pouch for five minutes as hard as you could without breaking up the powder.

933. Is there not an air chamber in it?—Yes, there is a hollow like that in a rocket.

934. Do the grains adhere together by any adhesive matter being put upon them, or is it simply from compression?—Simply from compression; there is nothing but the powder.

935. Therefore there is as little liability to injury by exposure to climate as cartridges made with ordinary powder?—Not more so than with ordinary powder. I think that the one would be affected as much, or nearly as much, as the other by climate.

936. Do you see any disadvantage in using compressed powder?—No, not if you have a strong cartridge, but if you do not have a very strong cartridge you cannot use compressed powder. I find that the effect upon the cartridge case is much greater than it is with loose powder; it increases the strain upon the cartridge case in a greater degree than it increases the velocity of the bullet.

937. Is that because there is quicker ignition?—Yes; there is a more rapid ignition and more of a blow than with the ordinary powder.

938. Is there less or more fouling with compressed powder than with the ordinary powder?—Less, certainly; the rifle is almost as clean after 100 rounds as after the first round; the use of a small piece of dry tow makes the bore perfectly bright.

939. Would not the use of compressed powder enable you to use the small-bore without the disadvantage of fouling?—I cannot say. I am referring to the powder fouling; the bullets I have used have been constructed so as not to foul the piece, and that is my principal object. I do not think it would overcome

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the fouling altogether if the rifle and bullet were not correct.

940. Do you consider that with the powder of the ordinary cartridge the fouling is chiefly powder fouling, or is it chiefly bullet fouling?—It is both. I think it is the bullet passing over the powder fouling, which makes such fouling as to interfere with accuracy.

941. If you do away with powder fouling, would you not do away with bullet fouling?—Yes, to a great extent.

942. If you succeeded in that, one might hope that you would get rid of it in the ·451 bore?—I think there is a greater chance of doing it with compressed powder than with ordinary powder. I could not say that you would get rid of it until I have made experiments.

943. It appears that there are two advantages from the use of compressed powder; one is, that you have a shorter cartridge, which is therefore more applicable to small-bores, and the other is, that the powder fouls less?—Yes.

944. Do you know whether the compressed powder has been subjected to any test in the chemical department of the Royal Laboratory?—I do not see what test you could put it to.

945. I mean with regard to the effects of climate upon it?—I put it to a test of that sort, as far as I could do so, but there is no reason to suppose that there would be any difference in the keeping properties of the two powders; you do not add anything to the powder, you merely compress it.

946. With regard to the half-inch bore, what do you consider is the proper charge of compressed powder and the proper weight of bullet to obtain a low trajectory, and combining, as far as possible, accuracy at the longer ranges?—I have got very good results with a bullet weighing 440 grains, and a charge of 75 drachms of compressed powder.

947. That would be equal to about 85 grains probably of uncompressed powder?—About 80 grains. I have brought up the targets if the Committee would like to see them.

948. Do you get a much lower trajectory than with the present Snider arms?—I have not compared the angle at long ranges; at 500 yards I think it is about 10 minutes, that is, in the arm that I have been trying lately, but with the arm which I experimented with some time ago, Burton's, owing to some cause or other, we got a much lower trajectory with the same cartridge.

949. I suppose for longer ranges it might be a heavier bullet than the 440 grain bullet?—That was the reason why I made experiments with a heavy bullet. I fired them up to 800 and 1,000 yards, and the results at 800 yards are, I think, very good indeed.

950. Have you worked out the mean figure of that trial?—These experiments were made with rifle barrels of different pitches; they were made with the object of determining what was the best pitch of rifling for a ·500 bore.

951. Can you mention the rifle that you fired with, and what the mean deviation was?—75 grains I think is the best charge with a 440 grain bullet and 75 grains of compressed powder, the pitch of the rifling being 28 inches, the figure was 9·6.

952. At what range did you fire?—500 yards. Then there was a 380 grain bullet with the same barrel, a 28-inch pitch, and 75 grains of powder, and the figure was 11·7. We find that a light bullet does better with the 42-inch pitch and a heavy bullet with a higher pitch. The wind was one day blowing right against us, and that makes a difference of 15 minutes or more than that at a long range. Then there was the 440 grain bullet with a 36-inch pitch, and the figure was 10·05. At 800 yards, and a 440 grain bullet, weight of powder 75 grains, and a 20-inch pitch, the figure was 34·55. With the same weight of bullet it was 23·50, and that I consider very good. Then a 380 grain bullet, and the figure was 37·35; it did not suit that light bullet. Another experiment was with a 440 grain bullet with a 28-inch pitch, and the figure was 19·70. Other experiments made at that range were pretty much the same. I go now to 1,000 yards; it was not a good day, and the wind was rather variable, with a 440 grain bullet, and a 20-inch pitch, 55·45, and the first target that I got at that range was 42·55.

953. You consider that the best proportion is the 440 grain bullet with a 75 grain charge of compressed powder?—As far as I have gone yet, I have got much better results with that weight of bullet and that charge of powder than with any others.

954. Have you tried the ·451 bore sufficiently to obtain any data as to the weight of bullet and charge of powder to be used?—No. I may mention that the weight of a bundle of ammunition with the light bullet of 380 grains, containing 60 rounds, is a pound less than 60 rounds of the service ammunition.

955. That is, for the ½-inch bore?—Yes; and with the 440 grain bullet it weighs about half a pound less.

956. From which description of rifling do you get the best results with the ½-inch bore?—The rifles I have used lately have been those supplied to me by Colonel Dixon, rifled on the same plan as the short naval Enfield; but I got rather better results, some time ago, from Burton's rifle.

957. In what respect did that differ?—I do not know.

958. Is it not in the chambering?—I think there are six grooves, but the grooves are not quite so deep; however, I cannot speak with certainty upon that point. The chambering is a little different; it is rather smaller at the top, I think, than the chamber of the service arm.

959. Do you know the Metford system of rifling at all?—No.

960. Nor the Whitworth?—I do.

961. Are you of opinion that the Whitworth rifling for the ½-inch, or for the ·451 bore, would produce better results than the rifling you have already reported upon?—I have tried the Whitworth rifling with the ·451 bore. I commenced, in fact, with the Whitworth rifle, and I have made experiments also with the Lancaster rifle. I found that the Whitworth rifle fouled very much more than the Lancaster rifle.

962. Was that in firing with compressed powder from the breech-loader?—No, with ordinary powder.

963. You could not, I suppose, try in the same rifle compressed powder and ordinary powder, as it would affect the length of the cartridge?—No; the compressed powder cartridge is much shorter than the ordinary cartridge.

964. With regard to the form of the bullet, is the form of it at all altered for the ½-inch or the ·451, compared with that which you consider the best for the ·577?—The bullets I have described were made on precisely the same principle as the ·577 rifle bullet.

965. Have you not tried a different description of bullet for the small-bore?—I have made a few experiments with solid bullets, but I find that the principle of construction which I have adopted in the ·577 bore cartridge is the best, because there is very much less liability to fouling, and you get greater accuracy than with a solid bullet.

966. You do get fouling when using solid bullets with the ½-inch bore, and even with compressed powder?—I have not made any experiments with the ½-inch bore with solid bullets and compressed charges; they have been with the ·451 bore, and also with the ·577 bore. The solid bullet which I referred to was one larger in diameter than the bore of the rifle.

967. Have you tried any experiments with solid bullets, such as Henry has been using?—Yes. When I first started with the Whitworth rifling I made some trials with the Whitworth bullet, similar to the one used by Mr. Henry, which had paper round it; but the experiments were not very extensive, and they failed.

968. In what way did they fail?—As far as I can recollect, I could not get accurate shooting.

969. From muzzle-loaders very accurate shooting has been obtained with solid bullets?—Yes.

970. How is it that the breech-loading system has, as one may say, affected the composition of the bullets?—I think one reason is, because in a muzzle-loader the bullet is in the barrel, but in a breech-loader, if you secure the bullet properly, it must be in the chamber. I believe that if you put the bullet partly into the barrel you will get better results than when it is in the chamber.

971. Why should it not always be put partly into the barrel?—If you did not have your lubrication on that part (*describing*) you could do so of course; if you get sufficient lubrication on the part in the rear you can do so, but it is a question whether you can do that.

972. Is it not difficult to procure lubrication which will stand climate; does beeswax do so?—Yes.

973. When you say that the bullet must partly enter the rifle, how far should it project beyond the chamber?—I cannot tell you that. I was only endeavouring to explain the probable cause of more accurate shooting being obtained with a muzzle-loader than with a breech-loader. I cannot tell you how far you should put it in.

974. In the cartridge that you have invented for the $\frac{1}{2}$-inch bore, do the bullets project at all beyond the chamber?—Very slightly.

975. Are they expanded into the barrel, or are they forced through it?—They are expanded into the barrel; they are smaller in diameter than the barrel, and they are constructed on the same principle exactly as the ·577 bullet.

976. Do you believe that the expansion takes place in the chamber, or in the barrel?—It is rather difficult to say. I believe it enters the barrel before it is expanded.

977. You now make a cavity in the rear of the bullet; is not that to produce expansion, or is it simply with reference to weight?—It is to produce expansion.

978. Have you made any experiments with Metford shells?—I have not. The Metford shell would be, except the shell part of it, precisely similar in construction, with a hollow in the head and in the rear, as in the other bullet.

979. Do you see any objection to the Metford shell being used generally by the troops?—It would be more expensive, I think that is the only objection.

980. It has less penetration, has it not?—Yes, less penetration, after it explodes.

981. With regard to the composition of bullets, do you consider that pure lead is better than hardened bullets?—That depends a great deal upon the rifling and the size of the bullet. I do not think there is anything to be said against pure lead.

982. When you say that it depends upon the rifling and the size of the bullet, is that less or more applicable to small-bores?—I cannot say. I have made a few experiments with hardened bullets in order to obtain increased penetration, but I found that as the hardness of the bullet increased there was less penetration; it was not a solid bullet that I used, but one constructed upon the same principle as the ·577 bullet, with a hollow in the front. With a solid bullet I do not doubt that greater penetration would be obtained.

983. You know of no disadvantages in hardened bullets?—No, except that it is more difficult to make them, and they are rather more expensive.

984. What would make them more expensive?—The material which you harden them with, for instance, tin would make them considerably more expensive; if you use antimony you would get a hardening, but even then the compound bullet would be more expensive than the lead bullet.

985. The bullets could be pressed out as the present bullets are, could they not?—Yes, but still the dies would wear out sooner; we do make hardened bullets now; the Westley Richards bullet is hardened with tin.

986. Do you consider it is better that the bullet should be naked, with wax held in cannelures, rather than that it should be covered with paper, with the paper holding the lubrication?—I do not see how you are going to use a bullet with paper round it, if you fasten the bullet properly into the case.

987. Would there be any difficulty in fastening it?—I do not see how you can fasten it.

988. The Henry bullet, for instance, has paper round it, but yet it is fastened tightly into the case?—You might have it fastened tightly into the case if you were making a few thousands only, but not if you had to make them by the million.

989. Then, in fact, the Henry cartridge could not be made up if it had to be made by the million?—You certainly could not depend upon the bullet being held with sufficient firmness in the case by its merely fitting the case; for we are obliged to allow considerable limits in the diameter of case. Of course if you had them made by skilled men, quietly and carefully, you could get them all made exactly the same size, but if you had to get them made by millions, perhaps even working all night, and employ children not skilled in making up these things, they would not be made sufficiently exact in size; you must have some positive mode of fixing in the bullet. I commenced originally with a bullet precisely of that kind, with paper round it; in fact the bullet of the service for a muzzle-loading gun; and I found when I came to knock them about in a pouch, the cartridges very soon got injured; I came to the conclusion that it was necessary to fasten the bullet positively by choking the case into a cannelure of the bullet.

990. Do you consider that the ammunition ought to stand rattling about for a long continued time in the soldier's pouch when not confined in packets?—I think it a very great advantage indeed. I look upon it as a necessary military condition which ought to be insisted on.

991. But ought that advantage to outweigh other advantages, for instance, with regard to shooting?—That would depend upon circumstances.

992. Do you consider that the shooting qualities of the ammunition ought to be sacrificed to the ammunition being able to stand rattling about in a soldier's pouch when not wrapped up in packets?—I would test the accurate shooting with ammunition which had been knocked about in the pouch. I should determine the shooting of the arm with ammunition which had been subjected to such treatment, and the arm should also be in a state in which it would ordinarily be on service. I should not think of testing the accuracy of the shooting in a military arm under conditions which were not likely to be fulfilled as a rule on service.

993. Would you not be putting the ammunition for breech-loaders to a much more severe test than it was ever supposed the ammunition for muzzle-loaders would be put to?—Yes.

994. In the ordinary way; the ammunition would remain tied up in a soldier's pouch?—In my opinion it ought not on service.

995. And it would be only on extraordinary occasions that the ammunition would be loose in the pouch?—Yes; but if you carry your ammunition tied up, you would lose the advantage of quick continued firing. I think that the principal advantage of the breech-loader is the rapidity of the fire; therefore your cartridges ought to be in such a state that you can readily get at them.

996. In order to obtain satisfactory experiments, do you consider that a good method would be to lay down the rifling and the bore, and leave the chambering to be determined by the length of the cartridge?—No, I think you must settle upon your cartridge case before you do anything else; in fact, before you can start to make a rifle at all, you must say what the cartridge case is to be.

997. Having fixed upon the cartridge case, what should the next step be?—The next step would be to ascertain whether compressed powder could be used, as the use of compressed powder would very much

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shorten the cartridge. With small bores the cartridge with loose powder is inconveniently long.

998. Having taken the cartridge case into consideration, you would fix the charge of powder?—Yes; and I think it would be desirable to try compressed powder, in comparison with loose powder.

999. Are not the experiments which have been already made sufficient to satisfy you?—I am quite satisfied in my own mind, but it is a question whether the Committee would be satisfied with the results I have obtained. I am satisfied, for this reason. The results have been uniformly good, and nothing has occurred during the trials to throw any doubt upon the soundness of the principle of compressed powder arranged as in my cartridge.

1000. Having fixed upon the cartridge case and the compressed powder, I suppose then the weight and form of the bullet ought to be determined?—I do not think you can fix them absolutely; many experiments must be made to determine the construction of the ·451 bullet.

1001. Would you wait for the rifling?—You might fix the weight of the bullet or the weight of the ammunition; you might say that the ammunition should be between such and such weights.

1002. And let the form of the bullet depend on the experiments made with the rifling?—Yes. I think it would perhaps be the best plan to leave that an open question.

1003. The length must also be determined?—Yes. If you insist upon the whole of the bullet upon which there is lubrication being in the cartridge case—that is, not projecting beyond it.

1004. But still, as I understand, you are not quite satisfied, referring to the small bore, that you have obtained the proper shape of bullet?—I have as regards the ·500 bore, but not with regard to the ·451 bore. The results of the experiments I have made with the ·500 bore have been very satisfactory as regards the bullet, but further trials with other arms are necessary to establish the construction.

1005. Have you now barrels of the ·451 bore ready to make experiments with?—No, we have not. There are two barrels, one of which is a Whitworth and the other is a Lancaster, but the chambering is too long for compressed charges.

1006. Therefore you will require fresh barrels?—Yes.

1007. Could you not alter them?—No. I think it would be best to settle upon the rifling in the first instance. If you have made up your mind as to the best system of rifling, it is a great point gained.

1008. Have you given much attention to the locks of guns, and considered whether anything more simple than the present lock could be obtained?—No, I have not. I think, however, in a breech-loader with a cap which is struck by the plunger the action of the lock is better than the action of a spiral spring.

1009. For what reason?—Because it is more sudden; it is more a blow than pressure. With the needle-gun the detonating composition is pierced by a sharp-pointed needle; but when it comes to a blunt needle or plunger, you want more of a blow.

1010. Supposing the spiral spring is adopted you would probably alter the cap to suit the spiral spring? There will always be a liability to missfire with a spiral spring.

1011. Would that be from a defect in its construction?—I have not had much experience in the matter, and therefore my opinion must be taken just for what it is worth.

1012. (*Earl Spencer.*) You have spoken of the comparative merits of paper and metallic cartridges, how does the comparison hold with regard to cheapness of manufacture?—I think that a self-consuming cartridge would be cheaper than the metallic cartridge.

1013. To any very great extent?—I should think perhaps to the extent of 20 or 30 per cent., but then, on the other hand, one would last much longer than the other.

1014. Would it last longer in store?—Yes; it is a much stronger cartridge, and therefore would not be so liable to be damaged. It also resists the effects of climate very much better, and in my opinion would be far cheaper in the end.

1015. Should you be able to use any parts of the old cases?—I could use the cases over and over again, and I suggested that when they were first introduced into the service. I pointed out that there would be a considerable saving, but I believe there was some military objection to it; it was said that it interfered with the drill; but we can use the case three or four times over. The only thing is this, that the case expands a little, and we should have to crimp it in to fasten the bullet; it would not be quite so good as when first made, still it could be used.

1016. We have heard of instances where a place has been besieged, and where the besieged have made their own paper cartridges, would not that be totally out of the question if they required metallic cases?—They would require to have the paper and the bullets. I am speaking now of rifles, not of the old Brown Bess, into which you could put anything; you would require to have bullets, paper, and powder and tools for making the cartridges; you must have all these stores, and therefore you might just as well have the complete cartridges in store. I think this objection to the metallic cartridge ought not to have any weight whatever.

1017. Do you know the difference in weight of 60 rounds of paper and 60 rounds of metallic cartridges?—The weight of the service breech-loading ammunition is only one or two ounces more than that of the old Enfield muzzle-loader.

1018. You have spoken of the causes of fouling; is it the incomplete combustion of the powder in a long cylinder that partly causes powder fouling?—The combustion is not so complete with powder which is burned slowly as with powder which is burned rapidly, and therefore you get more residuum—more of the unconsumed material.

1019. Is not that obviated, to a considerable extent, by using compressed powder?—Yes, it is, in the compressed powder cartridge, by the arrangement of the hollow; if you were to use solid compressed powder you would have very much more fouling than with the ordinary powder.

1020. We have observed in rifles of small bore particularly fouling at the muzzle rather than near the chamber; can you at all account for that?—No, I cannot; I have noticed that the fouling is generally about six inches from the muzzle.

1021. Do you think it has anything to do with the lubrication?—Probaby it may have, if the lubrication is not sufficient on the bullet to lubricate the whole length of barrel. We used to find it very much so indeed with the tallow lubrication in hot weather. The fouling experiments should be made in the summer, when the atmosphere is very dry, not in the winter; you cannot test fouling in the winter.

1022. In the reports upon the Whitworth rifles which have been sent in from different regiments have you observed contradictory accounts, some being very favourable, and some very unfavourable, and can you account for that?—I have not read the reports.

1023. Should you expect that in India the Whitworth rifle would foul less?—I should think it would certainly foul more.

1024. Why so?—Because it is a much hotter climate. It would depend a great deal upon whether the firing took place when the atmosphere was moist or dry; you get fouling when there is an east or north-east wind, much more than with a south wind.

1025. Were the experiments you made with ammunition which had been made up at the Royal Laboratory, or was it supplied by Whitworth?—It was made up in the laboratory.

1026. Was the lubrication applied?—Yes, it was; we made the whole of the cartridge in the laboratory.

1027. Was the lubrication pure beeswax?—No. I think it was on the bullet, and there was a wad of

beeswax and tallow at the base ; but I am not quite sure about that.

1028. Was there one of the metallic wads attached to the ammunition ?—No.

1029. Might the failures possibly be accounted for by the absence of that wad ?—I have not seen the metallic wad you refer to.

1030. Are you able to say whether it could be applied to military ammunition ?—It could be applied, but it would be very expensive; it consists I believe of two small discs, with tallow between them, very similar to my lubricator for the Armstrong gun.

1031. Is there any reason why the Whitworth muzzle-loaders should foul more than the Westley Richards breech-loaders ? — Yes. In the Westley Richards breech-loader the barrel is cleaned out every time with a greased wad ; the greased wad is forced through the barrel by the bullet.

1032. Having the same system of rifling, there could be no difference in that respect ?—No ; but the base of the bullet is larger in diameter than the bore of the rifle in the Westley Richards.

1033. Have you obtained good results from the Westley Richards ·451 bore ?—It shoots very well indeed as a rule, but we got into great difficulties with the Westley Richards rifles in cold weather. There is great difficulty in getting the cartridges home.

1034. Was that from the lubrication getting hard, or the casing of the cartridge getting hardened ?—It was from the size of the bullet ; but then if you decreased the size of the bullet, and made it easy to load in winter, you lose accuracy.

1035. Do you think that beeswax is the only good lubricant for a military weapon ?—Yes. I think that fact has been established beyond a question. It was a very serious question about eight years ago, but the experience we have had of it since that time has been sufficient to establish beeswax as the only proper lubricant for military ammunition. We had had experience of grease before that, but it was found to fail altogether as a lubricant, and on that account beeswax was introduced.

1036. What effect had the grease upon the bullet ? — The grease disappears in a hot climate, and, secondly, it corrodes the bullet to a certain extent. I do not think so much of the corrosion ; it is more the disappearance of the grease ; it disappears after a time, and there is no lubrication on the bullet when you want it.

1037. Have you ever tried oil as a lubricant applied to a wad ?—No, I have not tried a wad, because that would not do with an expanding bullet at all ; it would stick into the hollow and project and destroy the shooting. It might be possible to use a wad with a solid base bullet, but I have not made any experiments with a solid-based bullet and a wad.

1038. Is it not rather an open question, referring to the present Snider gun, whether the bullet may not be first expanded into the chamber and then forced through the barrel, even though the bullet is smaller than the barrel ?—I know that there is no fouling, and if it was forced through there would be fouling, because the lubrication would be scraped off. I think that the absence of fouling is a positive proof that it does expand into the barrel, and besides this there is no lubrication left at the end of the case. If you put a bullet in larger than the bore there is a great quantity of lubrication left at the end of the case, and the rifle fouls.

1039. Is the wad in the Westley Richards cartridge the only means of obviating the fouling ?—I believe that the wad in that cartridge cleans out the fouling every time it is fired ; it is in front of the bullet.

1040. You do not believe that the complete expansion of the bullet takes place, say, five or six inches from the chamber ?—I think it takes place sooner than that.

1041. Have you never tried any experiments by cutting down the barrels to ascertain that ?—No.

1042. Have you come to any conclusion as to which is the best twist, an increasing or uniform twist ?—No, I have not. Colonel Dixon has paid more attention to that than I have.

1043. If you settled what was the best twist for the ·500 bore, it would not follow that the same twist would be the best for the ·451 bore ?—No, the ·451 would probably require a greater twist if the bullet was longer.

1044. Were all the experiments you have made with the ·500 bore with the present bullet ?—Yes, the present construction of bullet.

1045. If you used a solid-headed bullet, would that entirely alter the experiments ?—I could not then get such accurate shooting.

1046. Have you tried it ?—Yes ; and I did not get such accurate shooting as I got with the hollow-headed bullet.

1047. I suppose a solid-headed bullet like the present one very much affects the question of penetration ?—Certainly; there is less penetration with a hollow-headed bullet than with a solid one, but not to any very great extent.

1048. I suppose the smashing power of a bullet does not entirely depend upon the weight of it, because you can get very great smashing power with a heavy charge of powder and a light bullet ?—Certainly.

1049. Some persons entertain the notion that a very small bore bullet would go through rather than destroy; do you think that entirely holds good ?—No, I think not.

1050. The present cartridge case is quite strong enough, is it not, for a large charge of compressed powder ?—Colonel Dixon has used, I believe, 300,000 cartridge cases of the same description as the service cartridge case in proving his arms, and with compressed powder, 5 drachms of powder and a 750 grain bullet, and there has not been a single accident of any sort as far as the cartridge is concerned. That, I think, proves that the construction of the case is sufficiently strong to stand almost anything. The only difficulty I have had to contend with has been the cutting of the case occasionally ; the case will cut round the base cup, and with this construction of case more than with other constructions ; but that is entirely overcome in the service cartridge, and I have now overcome it with the small-bore, if the chamber is correct.

1051. Does it prevent extraction ?—Occasionally, but very rarely a part of the case is left behind, and then you have to pull it out with the finger; it is a question only of arranging the cups and the coils. I have been using rather a larger charge and a heavier bullet than I have been accustomed to do, but that difficulty has now been overcome.

1052. Have you seen the Lancaster rifle much experimented upon ?—No, I have not.

1053. Not the small-bore Lancaster ?—No.

1054. Do you think that the rifle which is used by the Royal Engineers is as good or better than the service rifle ?—I do not think it better. I think it is as good, but not any better.

1055. Do you think the shooting is as regular?—The Lancaster shoots very well, but there is an occasional drop shot ; in this respect it is perhaps inferior to the Enfield.

1056. You would hardly recommend any particular kind of rifling as the best suited for military purposes ? —No, certainly not. I have not had sufficient experience to form an opinion.

1057. Do you think it is still desirable to have further experiments made as to rifling and as to calibre? —I think so.

1058. (*Mr. Ross.*) You probably think that, provided the calibre is the same, there are various systems of rifling that would give equally good results ?—I suppose so, but I have not had much experience in the matter.

1059. Do you think you get as good results with a cannelured bullet having lubrication on it as with a bullet wrapped in paper ?—I think so. We get much better results with a cannelured bullet in the Enfield

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rifle than with a paper-covered bullet; that is, with breech-loader.

1060. Have you ever tried the plan of fastening the bullet into the cartridge by having the bullet slightly tapered?—No, because the tapering would be the wrong way to fasten it in. You must make it larger at the top than at the bottom.

1061. Do you mean that you must have the circumference of the base of the bullet a little larger than the other end?—If so, you could not get it in; you must close it afterwards.

1062. Would there be any difficulty in that?—I do not think there is any necessity to make any provision for that at all. If beeswax be used as a lubrication, a cannelured bullet will, I believe, be found to answer better than a paper-covered bullet. I do not think it is necessary to make any provision of the kind referred to until you have failed with the cannelured bullet.

1063. In manufacturing percussion caps in large numbers can you command an equality of sensitiveness, or is it likely that some of the caps will be more sensitive than others?—There is always that likelihood, and you cannot prevent it.

1064. Do you think that with this system of loading, and the longitudinal sliding-bolt system, there is a danger of accidental explosion when loading?—Certainly. My opinion is very strong upon this point, because I think it is possible that such a thing may happen. I certainly should condemn any system of that sort at once, unless a premature explosion was made impossible; serious accidents have already occurred from this cause.

1065. Even although it was impossible for the piston or the striker to remain protruding, do you think the fact of the bolt pressing the cartridge home might in some instances explode the cap, although the piston was not protruding?—No. If the bolt can only press the cartridge home, and cannot by possibility give it a blow, the bolt system under these conditions would, I think, be a safe one.

1066. I suppose, under any circumstances, you would rather consider the block system, as in the present service arm, or the Henry that works in that manner, safer?—I think so, certainly.

1067. (*Captain Mackinnon.*) Do you think it necessary for a military weapon that a soldier should be able to fire, say 1,000 rounds, without fouling, or even 100?—You might test fouling in this way, or make the arm in a rusty state and then fire a few hundred rounds.

1068. My question referred to fouling from the ammunition?—The reason why I would apply a test of firing a certain number of rounds is, that I should by that means put the gun in such a condition as it would ordinarily be in from rust or dirt. I do not suppose that any man would ever fire 1,000 rounds without cleaning out his arm.

1069. Do you think that if a rifle could fire 20 rounds without any fouling it would be an efficient military weapon?—I do not think 20 rounds would be any test at all, but I would not go to so many as 1,000 rounds. No doubt it would be a great advantage if you could get an arm which would fire 1,000 rounds without any fouling, as an indication of its being of proper construction. The present arm will do this.

1070. Would 250 rounds fired quickly be too severe a test for a gun?—It all depends upon what the weather is when you fired them. If it is a wet day I do not think that 500 rounds would be a sufficient test, but if it is on a hot dry day with an easterly wind blowing, and under a hot sun, then, perhaps, 300 or 400 rounds would be sufficient, for if the gun did not foul then it never would foul—not from mere firing.

1071. You would require two different sorts of bullets for a flat trajectory at short ranges, and for good shooting at long ranges?—I am not quite so sure of that. I thought so the other day, but the 440 grain bullet gives quite as low a trajectory at 500 yards as the 380 grain bullet with the same charge of powder; I believe that the lowness of the trajectory, at ranges beyond 300 or 400 yards, depends much more upon the steadiness of the bullet than upon its weight. If you can get a light bullet which is very steady, the light bullet will have a very great advantage over a heavy bullet which is not steady in flight even at long ranges. If the reverse is the case, and the light bullet is a little unsteady, which would be shown by the shooting, and the heavy bullet is steady, then you will have a much lower trajectory with the heavy one, even at short ranges. In the experiments which I have made the 440 grain bullet shoots quite as low with the same elevation as the 380 grain bullet at 500 yards, which rather surprised me when I first ascertained the fact.

1072. You do not get good shooting with the 440 grain bullet at 1,000 yards?—That depends upon what sort of day it is, whether the wind is high and variable or not.

1073. (*Captain Rawlins.*) Do you think that in a small-bore the chambering should be as small as it can be consistently with the proper working of it?—Yes, I think the chamber ought to be made as small as possible, consistently with easy loading; that is to say, you must be able to load with the cartridge when it is bent to a certain extent.

1074. Do you think that if the paper on the cartridge got wet, it would interfere with that?—No; we have made experiments by placing the cartridges in wet sawdust and mud and water, and it did not make any difference.

1075. Do you attach great importance to paper being on the cartridge?—The only use of it is that it makes it more waterproof; the paper is not necessary.

1076. If it was found to interfere with the working of the chamber, could it be dispensed with?—Yes, it only fastens the coiled metal together; that is all you use the paper covering for.

1077. Is there not always a certain amount of moisture in all powder?—Yes.

1078. Would that affect it in any way if it were enclosed so that the moisture was shut in with the powder; would it deteriorate?—No; it is the normal condition of powder to have a certain amount of moisture in it, whether the powder be in a barrel or in a cartridge.

1079. But the moisture would be shut in with the powder?—The moisture that was in the powder in the first instance would remain with it.

1080. And not diminish?—No.

1081. (*Chairman.*) I think your objection to forcing the bullet through the barrel was that the lubrication was apt to be stripped off?—Yes.

1082. If a solid bullet was used with a wad and a lubricant of oil, would that objection be done away with?—Oil is out of the question; anything but beeswax, I think, would be objectionable.

1083. Why do you think oil would be out of the question?—Because it would not be on the wad or bullet when you wanted it. If you depended for lubricating the gun upon anything else than that which will remain in store for a number of years without deteriorating in the hottest climate, when you wanted it it would be absent.

1084. You think oil would not do?—I think it would be worse than tallow. It was found, when I first proposed beeswax, that tallow would only keep for a very short time in a hot climate; all the tallow on the bullet disappeared, and oil would disappear sooner than tallow, there is no doubt about it.

The witness withdrew.

Mr. JAMES KERR examined.

1085. (*Chairman.*) You have, I believe, turned your attention to the manufacture of military arms for some time?—Yes; I have had considerable experience during the last 14 years.

1086. In what capacity have you turned your attention to them?—As superintendent of a small arms manufactory, by machinery, similar in every respect to the factory at Enfield.

1087. Have you made many experiments recently with rifles of different calibres?—Yes; I have had considerable experience in shooting with and making rifles of different calibres.

1088. Have you come to any conclusion as to which calibre is the best to produce a low trajectory, combined with accuracy?—I am pretty well satisfied on that point as to which would give the best results as a muzzle-loader.

1089. Do the same conditions apply to a breech-loader?—I do not think that small-bore breech-loaders have been tried sufficiently to arrive at a definite conclusion, although I have had considerable experience in using them.

1090. With what results?—The shooting has been more accurate and the trajectory lower with the small-bore than with the large-bore, but there are other difficulties to be taken into account.

1091. With what sized bore have you experimented?—I have experimented with the ordinary small-bore (451), and also with the Chassepôt rifle (·433).

1092. What difficulties did you find as peculiar to the breech-loader?—The difficulties (assuming the question to apply to small-bores) are in extracting and in the damage done to the shell of the cartridge by the greater force of the explosion from its being confined in a smaller space.

1093. The difficulty, I suppose, is in the length of the cartridge?—It is in getting it out. I find that we must have a much smaller margin in chambering a small-bore than a large-bore on account of the strain being greater on the cartridge in the former than in the latter. I find things occur with the small-bore which do not occur with the other.

1094. That is to say, you think the cartridges must fit the chamber more accurately?—Yes.

1095. Have you formed any opinion as to which is the best system of rifling?—I think that provided the number of grooves be not less than five and the cylindrical boring be retained for the lands various systems of rifling would give results nearly alike. I think that the great thing to arrive at is, the proper pitch of spiral, and to have shallow rifling; something into which the bullet would expand in an easy and simple form.

1096. What do you think is the proper pitch of spiral?—We prefer 20 inches, but that is for mere accurate shooting. I do not think it would be so well suited for military purposes as for private practice, it is really drawing out the real merit of the rifle barrel, which perhaps could not be carried out so well in the hands of the soldier.

1097. For what reason?—The only thing that I should think you might be troubled with would be the fouling, and I think it stands to reason that if you burn a certain amount of powder in a very small bore there must be more fouling matter left in it than in a larger one.

1098. Do you find that the fouling is greater in a small-bore than in a large-bore?—I have not tested the one against the other without cleaning, but I think there would be more trouble with the small-bore than with the large-bore.

1099. With regard to locks, I believe you have given some attention to improvements in the present lock?—Yes, I have been studying that part of the question very closely indeed.

1100. Do you consider that the present lock can be improved upon?—I think it is an utter impossibility. I think it has been so well studied. I consider that the necessary exploding power, with the easiest and most certain way of applying it, can be obtained by the present lock.

1101. Do you not think that you could do away with the sear spring in the present lock, and let the main spring do the work both of sear and main springs?—I should not recommend that. In the year 1851 I made a lock for an inventor in which the main spring acts as main spring, tumbler, and sear spring; the hammer as hammer and sear, the lock-plate being the third part. The objection to the reduction of the number of parts is, that if you break the main spring you break (in the instance just given) three parts of the lock, and if the hammer, two parts. I believe that the great advantage we have gained in this country from the Americans in the manufacture of guns by machinery is in the subdivision of the work, thereby making the operations so simple that any class of labour could be employed upon them. I found when in America in 1856 that the object to be attained was to limit the work to be performed in each operation as much as possible, thereby simplifying the manufacture, and that the parts should be interchangeable. I therefore disapprove of reducing the number of parts in the lock at the expense of each part having to perform two or more operations, and also because it would tend to complicate the manufacture.

1102. Do you see any objection to making locks depend upon a spiral spring?—Yes, the objection is this, whatever weight you make the spring, you must at all times have to pull back that weight in cocking the rifle without any assistance whatever in the form of a lever. If you add to this the increased friction that may be caused by fouling or rust, the act of cocking requires so much force that in the French army the men have not been able to accomplish it without applying the heels of their boots in many cases. I have, myself, found geat difficulty in this respect.

1103. Is not that because the piston is very much clogged by fouling from the self-consuming cartridge?—I allude to the metallic cartridge, from which there is not the least escape of gas; the stiffness arises from the friction of the bearing parts of the striker, which adds very much to the weight of the spring. The spiral spring used in the Chassepôt will not always break the cap. I could fire 50 or 100 rounds with perhaps about 2 per cent. of miss-fires, but that would only be done by jerking the pull. When pulled off gently for accurate firing the power is so much decreased that the striker can be seen moving slowly forward, the miss-fires would then be increased to about 25 per cent.

1104. Have you seen the Chassepôt fired?—Yes.

1105. How do you think it answers with the self-consuming cartridge?—There are frequently miss-fires; it answers very well when the cartridges are taken fresh from the packets, but when they have been carried loose there are frequently miss-fires.

1106. What metal case cartridge have you seen tried in France?—The Boxer cartridge principally.

1107–8. (*Earl Spencer.*) You have seen the trajectory of the Chassepôt and of our small-bore?—Yes.

1109. Which is the lowest?—I have not gone into that. I have shot with the Chassepôt up to 900 metres, and the shooting was not very good. The elevation required did not appear to me to be unusually high, but I have uot been able to compare it in this respect with our small-bore.

1110. On general principles which should you prefer, the Chassepôt bore or the ·451 bore?—I should not be inclined, without making further experiments, to decide in favour of the bore of a military breech-loader being so small as either of the rifles named. I think the bore should be a little larger than our small-bore, say ·5.

1111. Do you think the miss-fires you have spoken of were caused by rust?—No, from want of power; there was just sufficient power to drive the needle forward, but it was not equal to break the cap at all times.

1112. Perhaps the spring was not quite strong

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enough.—It was strong. The loss of power was from the friction of what was attached to the cocking. If they were to make it stronger they could not work it with the hand.

1113. Have you heard of the same drawback or defect in the Prussian needle-gun?—No, but I do not think that they would have the same difficulty from the needle, because there is less power required; the needle will penetrate, and that is all that is required.

1114. Is the spiral spring in the Chassepôt well protected from damp?—Perfectly so.

1115. Have the guns been specially exposed to the weather in order to try them?—Not that I am aware of. What I speak of have been in my own possession; they have been carried backwards and forwards, but not exposed in any way.

1116. Do you attribute the miss-fires to the spring being originally weak, or from having become weak from fouling?—I attribute them to the spring having been too weak originally, but I do not think it would admit of being strengthened, from the difficulty there is in cocking; weak as it is, there is very great difficulty in raising the hammer, and I understand it is quite a common occurrence to see the French soldiers using the heels of their boots to start it.

1117. Have they adopted the metallic cartridge now in France?—They are going on with experiments at present.

1118. (*Mr. Ross.*) Supposing that we wished to try some different specimens of breech mechanism in rifles with the same description of barrels, and suppose the barrels ready made, how long should the inventor of the breech mechanisms take to apply them to the barrels?—If they were all ready it would take but a very short time.

1119. If they were not all ready what length of time would it take?—I could not tell unless I knew what the breech systems were; but if they had the breach mechanisms ready there would be no trouble. If I had them all ready it would only be a matter of a day or two. You would not want them browned I suppose? It would be only to screw the barrels into them? I think that all the guns that I have seen have had the barrels screwed into the system.

1120. Can you obtain from a breech-loader as good results as to trajectory and accuracy as from a muzzle-loader?—No.

1121. For what reason?—There is a loss of power in the breech-loader.

1122. How do you explain that?—I go by this: I think there is no doubt that the "Boxer" cartridge is much superior to all other cartridges in regard to power, and I attribute that to its ease of expansion; the shell of the cartridge is so easily expanded to the walls of the chamber that less power is lost with it than any other metallic cartridge. If a great amount of force be required to expand the shell of the cartridge the bullet would move forward before the full expansion would take place, and, consequently, shooting power would be lost. It may to a certain extent be compared to the shooting obtained from iron and from steel barrels, in one the trajectory is very different from the other.

1123. You would get a lower trajectory from the steel barrel than from the iron one?—Yes, that I think is quite clear; you may show that by the ordinary rifle, in the sighting.

1124. I suppose that if a rifle were made with a steel barrel you would have a lighter barrel with the same strength than in a heavier barrel made of iron?—I should not reduce it in thickness, but you would get what you say, as you would have a more dense metal.

1125. Have you experimented both with steel and iron barrels?—Yes, both in America and in this country, and I know that the advantage of shooting with a low trajectory from a steel barrel is considerable.

1126. (*Earl Spencer.*) What do you consider to be the cause of that?—Before our volunteer movement was started there was a strong rifle club in connexion with the Victoria rifles, and they were introducing steel barrels made by a maker in Glasgow, and these rifles used to be excluded from certain prizes on account of their superior qualities and the lowness of the elevation, but this happened 10 or 12 years ago; it is perfectly well understood now by all gunmakers that such is the case.

1127. Can you give the reason for it?—My opinion is, that the superiority of the steel over the iron barrel is entirely in the greater density of the former metal. A certain amount of expansion takes place each time the rifle is discharged; this expansion is less in steel than in iron, and, consequently, gives greater shooting power.

1128. That is to say, the steel barrel will offer greater resistance?—Yes.

1129. (*Captain Mackinnon.*) Do you think that divided stocks like those used by the Americans are strong enough for military purposes?—I believe there have been many experiments made in the United States as to that, to see which would break most readily. If you had additional metal, I think you might get them strong enough. There have been 7,000 "Sharpe's" carbines made with divided stocks for our service, and I am not aware that the stocks have been found to be too weak. My explanation in reply to the questions concerning the ordinary lock may not be clear, I would, therefore, beg leave to submit to the Committee that it is far superior to any other means of exploding that has come under my notice, and that great advantages must arise from having it applied to breech-loaders without its being connected with the breech system. Its being embedded in the stock preserves it from injury from exposure, and it possesses great advantages as regards durability, power, and means of regulating the "pull off." The want of power in the locks in many of the new systems, and their liability to injury from exposure and the process of cleaning, where they are immediately connected with the shoes or systems, would, in my opinion, be fatal to them as military arms. I would also wish to record an opinion as to the alteration that I consider could be made in the weight and proportions of military rifles. The Enfield rifle is undoubtedly one of the best military arms that has ever been produced as a muzzle-loader, but it is clear to me that military breech-loaders must be considerably reduced both in size and weight, and I am convinced that this can be done without detracting from the shooting qualities of the rifle for military purposes. With respect to my remarks on the Chassepôt rifle, I would wish to state that its only defects are in the action of the lock, and in the cartridge being of paper. With these defects remedied it would be an exceedingly good military rifle, as I believe the piston and cylinder system of breech-loading to be the strongest, and also the simplest to manufacture. I also understand that nearly every other plan of breech-loading has been tested by the Prussian government and found to fail. All systems that merely fold behind the base of the cartridge, or that are blocked up in any way, must, to a considerable extent, depend upon the strength of the cartridge for their safety.

1130. Do you think that such stocks would be cheaper than stocks made of one piece?—There might perhaps be a saving in material, what would do for one would not do for the other; but I think that the stock making is the cheapest part of the whole gun, there is a great saving effected by the use of ma-

1131. (*Captain Rawlins.*) Have you ever used the magazine or repeating arms?—I have handled them a good deal and I have used them, but I have not had much experience of them. We are agents for the Ball and Lamson gun, which is a repeating rifle. I have been in communication with them this week in reference to getting on with the arms, and they are still improving them.

1132. Have you seen any explosive bullets fired?—No. I have seen the Metford shell fired, but that was some years ago.

The witness withdrew.

Mr. JOHN RIGBY examined.

Mr. J. Rigby.

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1133. (*Chairman.*) You have been for some time engaged in the manufacture of military arms?—Yes, but not extensively.

1134. In what capacity have you been manufacturing arms?—My experiments have been directed to matters of precision and range more than anything else.

1135. You have a factory in Dublin, I believe?—Yes. I may qualify what I have stated by saying that I have been engaged for a long time in experimenting on cartridges for breech-loading arms, military and otherwise.

1136. Before endeavouring to obtain data as to the bore and twist of a rifle, I presume it is as well to determine the weight of the arm?—The weight of the arm is one of the first considerations.

1137. Supposing a military arm (a breech-loader) to weigh 9 lbs. 8 oz., what bore do you consider would be the best to obtain a low trajectory and accuracy in shooting up to 500 yards, and accuracy at ranges beyond that distance?—There are many considerations to be taken into account. I think it would be difficult to mention the exact decimal of an inch that would be the right thing.

1138. Do you think that the ·451 bore would be a good one?—Yes, it may be taken, I think, as a good bore for that purpose; but there are other considerations to be taken into account, such as the length of the cartridge, and other things.

1139. Is the ·451 bore as good or better than the half-inch bore to produce lowness of trajectory up to 500 yards, and accuracy beyond 500?—The ·451 bore is better with a limited weight of projectile.

1140. Do you think that the projectile is the first thing to be considered?—I think you must consider that question.

1141. For the ·451 bore, what do you consider to be the proper charge of powder and the proper weight of bullet?—I confess that I feel a reluctance to give an answer *ex cathedra* upon these detached points, because there are so many things to be taken into consideration. I might require afterwards to modify my answers and to give something very different, looking at the question in another point of view.

1142. Generally speaking, what do you consider to be the first requisite of a military arm to produce a low trajectory and accuracy in shooting?—A high initial velocity and a small displacement of air, but I think there is one very important consideration which has not yet been mentioned, and that is the killing power of the bullet, because if you go for range alone you may diminish the bore considerably beyond ·451, but I think you must in the first place take into consideration what amount of killing power on the arrival of the bullet at its object you want to retain.

1143. Suppose we fixed the bore at ·451, what should you consider was the proper weight of bullet and charge of powder for that bore?—At what range?

1144. For lowness of trajectory up to 500 yards, and accuracy of shooting at long ranges up to 1,000 yards?—Those considerations are diametrically opposed almost; accuracy of range up to 1,000 yards is opposed to lowness of trajectory at a short range.

1145. That is, with the same description of cartridge?—Yes.

1146. But might you not have these requisites combined by using different kinds of ammunition in the same rifle?—Certainly, that is possible.

1147. To obtain a low trajectory up to 500 yards, and fair accuracy beyond that, what weight of bullet and charge of powder should you think would be best suited?—A low trajectory at the shorter ranges requires a very light bullet, and I do not think that for a military arm you should go lower than 400 grains.

1148. What do you think should be the charge of powder?—There again I must ask you what range you mean?

1149. I am speaking of the same, with a military arm, for a low trajectory?—You can hardly use too much powder, as you must limit the amount of powder, having regard to the breech-loading apparatus, the cartridge, and the convenience of carriage.

1150. Do you think 85 grains would be too much?—No.

1151. Would it be sufficient?—Yes. I think that 85 grains of powder with a 400 grain projectile would make very effective shooting.

1152. Have you tried compressed powder with an air chamber running up it?—No.

1153. If you wished to obtain greater accuracy beyond 500 yards, I suppose a heavier bullet would be required?—Yes.

1154. Up to what weight of bullet should you be inclined to go?—If you had said 800 yards, I should be inclined to say 480 grains. If 1000 yards, 530 grains.

1155. (*Earl Spencer.*) You have spoken about the penetrating power, or rather the smashing power of a bullet for military purposes, but that does not entirely depend upon the weight of the bullet. Cannot you get with a light bullet and a heavy charge of powder considerable smashing power?—Yes, but that is the reverse of penetration.

1156. Would you consider a light bullet and a heavy charge of powder effective for military purposes?—Yes.

1157. You have probably tried experiments with it with regard to large game?—Yes, more especially as to large game.

1158. Is there any reason why you should not apply the same principle to a military weapon?—It would not require to be carried so far for a military weapon; a man is not so tenacious of life as an animal.

1159. I suppose your experiments have been principally made with match rifles?—Latterly they have been more with them than with others.

1160. What bore do you prefer in order to get accurate shooting with match rifles?—The ·450 bore.

1161. You have adopted your own system of rifling, have you not?—Yes.

1162. Is that an increasing twist, or an uniform one?—It is an equable twist.

1163. Have you any objection to state your reasons for preferring an uniform twist to an increasing one?—No; my object in using an uniform spiral is this, I wished to give a rotatory motion to the bullet with the smallest possible amount of pressure between the barrel and the bullet, or the smallest amount of grip, and it appeared to me reasonable that the spiral of the grooves in the barrel, and the spiral of the indentations in the bullet ought to correspond all along their entire length, otherwise the same action would occur as when you screw a screw into a nut of different pitch. The bullet, when expanded by the action of the gases at the breech, moulds itself to the form of the barrel to a certain extent, and in my improved long range rifles, that action is diminished, so that the grip of the bullet on the barrel is the least that will give it rotation. If the bullet in going through the barrel encounters a spiral of more rapid pitch near the muzzle, it will be more apt to strip than if it follows along grooves of the same pitch throughout; that is the theory so far as that part of it is concerned.

1164. Do your rifles require the bullets to fit very nicely in order to shoot well?—No, the bullets fit easily

1165. You would not get wild shots if they were made in very large quantities?—No, but it might be desirable to reduce the hardness of the bullets slighty.

1166. Is your system free from fouling?—Perfectly so.

1167. Is it more free from fouling than if the grooves were cut deeper?—Yes.

1168. Have you tried experiments by firing a great many shots out of the rifle without cleaning it?—I have fired 400 or 500, not more than that.

1169. Out of a muzzle loader?—Yes.

1170. Without the shooting deteriorating afterwards to any great extent?—Yes.

1171. I suppose you do not see any reason why the same system should not be satisfactorily applied to

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breech-loaders?—I have applied the same system to sporting breech loading guns of different bores—at least an analogous system, based on the same principles.

1172. And with good results?—Yes.

1173. Have you adopted what is called the expanding or forcing system with the bullet?—The expanding system.

1174. Is not the bullet expanded into the chamber before it reaches the barrel and almost upset?—With respect to my system of breech-loading for accuracy, as I have not as yet made it public, I should prefer not to enter into particulars.

1175. You will probably not object to state whether you use a chamber?—No, I do, but as to the way of placing the bullet in the chamber, the proportion of the bore, and the chamber and cartridge, and so on, those are points that I do not wish to enter into.

1176. (*Chairman.*) Have you any objection to tell us whether the bullets should be solid, or whether the hollow bullets now in use are better fitted for shooting purposes?—The hollow bullet is preferable in my opinion.

1177. That is, a hollow at the base as well as one at the head of the bullet?—It is in general a hollow bullet—hollow throughout—I use them in all rifles—a very hollow bullet—a carcass.

1178. Why, theoretically are they better than a solid bullet?—You can attain a limit to the expansion of a bullet in two ways, either by hardening a solid bullet, or by hollowing a soft one, and where one method is not desirable you can try the other. It is not desirable, I think, to harden military bullets much.

1179. Why not?—Because it would diminish their killing power.

1180. Do you consider that beeswax is the best sort of lubricant to place on the bullet?—No, I do not think it is the most desirable for a breech-loader.

1181. I supposed it might be desirable as being the best suited to resist the effects of climate?—I think you have in the breech-loading arrangements facilities for overcoming the difficulties which exist in the muzzle-loader on that score—in the muzzle-loading cartridge the lubrication is exposed, for instance.

1182. Do you think it is a better plan to cover the lubrication with paper, or put it in the cannelures of the bullet?—I can hardly answer that.

1183. How soon do you think your experiments will be completed?—I do not know that a man who follows any pursuit of a scientific character ever completes his experiments, but the time of their completion will greatly depend upon the necessity for completing them, and in my case that is not very urgent.

1184. Do you consider that any improvement could be made in the locks of rifles by substituting a different sort of lock for the present lock, with regard to the main spring and sear spring?—Yes, I think so for military purposes.

1185. Do you think the spiral spring is applicable?—I think so; I would not reject the system that had it, if it was desirable in other respects.

1186. (*Mr. Ross.*) In your match rifles that you make expressly for accurate shooting at long distances, do you use a hollow bullet?—No.

1187. Do you use a solid one?—Yes.

1188. Do you know any reason why the same principle should not hold good with a breech-loader?—No, I do not.

1189. Then the objection which you made just now to a hardened bullet for military purposes was because you thought it would not inflict so severe a wound?—Yes.

1190. On the other hand it would have great penetrating power?—Yes.

1191. A hardened bullet, I presume, necessitates shallow grooving?—Yes.

1192. Do you think that shallow grooving is liable to stand the wear and tear of a military arm?—Yes, I think it could be made deep enough for that purpose.

1193. Your system of grooving I believe is very shallow?—Yes.

1194. Have you had any instances of your rifle having lasted for some years, exposed to rough usage?—No, it is not more than twelve months ago since we commenced to make them shallow, but I have no doubt upon that point.

1195. I understood you to say that the ·451 bore with a bullet of 530 grains gave the best results?—Yes, at 1,000 yards.

1196. You also stated that a lighter bullet would give a lower trajectory at 500 yards?—Yes.

1197. I may conclude from that that every grain you lighten the bullet below 500 grains is done at a loss of accuracy, but rather at a gain of trajectory?—Yes, at a shorter range; my theory is that each range must have a different weight of bullet adapted to it.

1198. For accuracy, do you consider that the ·451 bore has a decided advantage over the ½-inch bore at long range?—Yes, with a limited weight of gun and length of barrel.

1199. If two equally good rifle shots were to shoot a match, one using the ½-inch bore and the other the 451 bore, which do you think would have the advantage?—If both were limited to 10 lbs. the ·451 bore would have a decided advantage.

1200. Have you turned your attention to repeating rifles?—I have.

1201. Will you be good enough to name those that you have tried?—The Henry and Spencer, but more particularly the Spencer.

1202. Do you think that they are applicable for military purposes?—I do, and particularly for cavalry.

1203. Could such arms be easily manufactured?—Yes, with a system of interchangimg machinery.

1204. Like any other breech-loader?—Yes.

1205. Do you think they would stand the rough usage of a campaign?—The evidence which was afforded us during the American war was very favourable in that respect.

1206. I suppose that a long cartridge, or even a longer cartridge than is used in the Spencer repeating arm, would be impracticable as a repeater?—It would reduce the number of shots.

1207. Would not a longer cartridge impede the action?—Yes, a much longer one; the Spencer construction would not be suitable.

1208. What is the charge of powder in the Spencer repeater?—45 grains, in addition to the detonating composition.

1209. Would 70 grains be too much?—I do not think it is suited to 70 grains, not as to the ½-inch bore.

1210. Could you shut off the magazine and load the piece independently as a breech-loader?—Yes. The Spencer gun has been very recently improved by an alteration and a new extractor, and they work exceedingly well, and that is one reason why I said I thought they would be useful, especially for cavalry, as a long range would not be so essential for them.

1211. I suppose it could be so arranged that it could be loaded as an ordinary breech-loader with a long cartridge, and have also shorter ones in the magazine?—Yes, we could do that easily.

1212. (*Captain Mackinnon.*) As I understand, you have not yet perfected your system of breech-loading?—I have not adopted any particular system of breech-loading for military purposes; my experiments have been general, and applicable to any breech-loader, with respect to the cartridge, the bore, and the method of rifling, and so on, so as to get the best results with any system of breech-loading.

1213. Suppose that different systems of breech mechanism were sent to you, which were approved of; how long would it take you to attach barrels to them, or could you fix the barrels on?—Yes; my business would be to rifle the chamber and barrels, and provide the best ammunition that I thought the most suitable to obtain the best results.

1214. Would it take you long to rifle the chambers and to fix the barrels on to the breech mechanisms?—No, it would take a very short time. The ordinary Snider Enfield can be altered to a small-bore gun with new barrels, and I believe the Belgian Government are doing something similar now.

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1215. Do you know the Boxer cartridge ?—Yes.

1216. Do you think that the first thing to lay down is the weight of lead in the bullet, and from that to work up every other part ?—That is a most important point, the weight of lead.

1217. Is it possible, do you think, to make a small-bore breech-loading rifle shoot without fouling ?—I think it is.

1218. Does it not depend altogether upon the cartridge ?—In a great measure it does, and on the rifling.

1219. But chiefly on the cartridge ?—It depends upon a combination, the cartridge, the rifling, and the chambering.

1220. (*Capt. Rawlins.*) You have spoken of attaching barrels to different sorts of breech mechanisms with the view of ascertaining which was the best cartridge to obtain the best results, have you used any paper cartridges in that way ?—My experiments with paper cartridges are comparatively old now. I have abandoned them for some years. I abandoned them before I devoted my attention to a fixed cartridge, such as Colonel Boxer's cartridge. My patent for a cartridge, which is analogous to Colonel Boxer's cartridge, dates from 1861, that was for a coiled metal cartridge case.

1221. All your recent experiments I suppose have been with the metallic cartridge ?—Either coiled metal cartridges or drawn copper cartridges.

1222. (*Chairman.*) Supposing we required some barrels, and that we gave you the length of the cartridge and the bore, would you be willing to furnish us with them ?—Certainly.

1223. How long would it take you to furnish us with those barrels, chambered for your own bullet—could you do it in a month ?—It requires a little consideration, it would depend upon my engagements. These things depend very much upon the weather being favourable for experimenting, because certain data would have to be worked out in the open air.

1224. (*Mr. Ross.*) Have you any preference for any description of repeating arm ?—I prefer the Spencer repeater from what I have seen of it. I have only seen three practical repeaters, and they are the Spencer, the Henry, and the Ball and Lamson. I very much prefer the Spencer to either of the others.

1225. Is it better adapted to stand rough usage ?—Yes, and it is more simple. What I would suggest to the Committee is, that they should try with the same system of breech-loading different systems of chambering, rifling, and cartridges, applying for each to those in the trade who have most studied that special branch, and then placing the different systems in competition. At the same time I think that any suggestion of the kind to the trade would be a failure, unless it was made a matter of business, and that they will not communicate knowledge which they have painfully acquired without seeing their way to some advantage.

The witness withdrew.

Adjourned to Friday next at 11 o'clock.

War Office, Friday, 14th February 1868.

PRESENT:

LIEUT.-COLONEL FLETCHER IN THE CHAIR.

CAPTAIN RAWLINS.	E. ROSS, ESQ.
CAPTAIN MACKINNON.	CAPTAIN HAIG, Secretary.

JOSEPH WHITWORTH, Esq., examined.

J. Whitworth, Esq.
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1226. (*Chairman.*) I believe you have been engaged for a long time in the manufacture of rifles ?—Yes. In 1854 I was requested by the Government to undertake to find out the principle on which a rifle barrel ought to be constructed.

1227. Have you continued to make experiments from 1854 down to the present time ?—The Committee will see from what is stated in this book (*handing in the same*) that Lord Hardinge employed six of the most celebrated gunmakers in London, each to make a rifle, and those rifles were tried in 1852. They will also find in this book that at 500 yards range the average figure of merit of the six rifles, was 35 inches from the machine rest, and 33 inches from the shoulder—that is the average of the whole six rifles—the figure of merit is given in the book separately for each rifle, but I have kept that in my memory as the average of the whole six. In April 1857, we had our first trial at Hythe against what was then called the Enfield rifle. I may mention, with reference to the question you have just put as to the time I have been employed, that I made a stipulation with the Government that a gallery should be erected in my grounds in which the experiments could be conducted. After the gallery was erected, I completed the rifle as it is now in 18 months—that was just the time it took.

1228. Was the rifle which you then completed a muzzle-loader or a breech-loader ?—It was a muzzle-loader.

1229. With regard to good shooting, do you consider that the same conditions apply to the breech-loader as to the muzzle-loader ?—As far as the rifling goes there can be no doubt about it.

1230. In order to obtain a low trajectory up to 500 yards and accuracy at longer ranges, which bore do you consider would be the best ?—When I commenced, the quantity of powder and the weight of the bullet were given to me—530 grains of bullet and 70 grains of powder. I found that the powder which was furnished to me was a very slow powder, it was the siftings of the cannon powder, for there was no rifle powder made at that time. I found that it did not expand the bullet, and I tried other powder, Hall s powder, and Curtis and Harvey's powder, and I found no difficulty in expanding the bullet with what was termed sporting powder. I adopted a device which enabled me to get at the truth of the matter. After trying many substances, I hit upon bran, and found by firing a light bullet into bran that I could catch it without damaging it, and I ascertained that the powder then used in the service would not expand the bullet—which would very often leave the barrel without taking any rifling. I then was led to adopt the mechanically fitting bullet, putting a small portion of tin into it—about one-tenth. I found very great advantage, particularly in penetration; it gave about three times the quantity of penetration that a leaden bullet would.

1231. In order to obtain the conditions I have mentioned, viz., a low trajectory and accuracy, what do you consider to be the requisites—what bore, what charge of powder, and what weight of bullet ?—

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Taking that quantity of powder, 70 grains, and that weight of bullet, I found that the best diameter of bore was four-tenths and a half, ·451 as it is called.

1232. Do you consider 70 grains of powder and 530 of lead to be the best charge of powder and the best weight of bullet, would it not be better to increase the charge of powder?—Yes; the best charge of powder for that diameter of bore is 85 grains of sporting powder, that is the quantity that I recommended for match shooting, and that has been adopted all along at Wimbledon, the weight of the bullet being 530 grains as for the military rifle. The weight of that rifle is 10 lbs., which is too heavy for a military rifle. For a military rifle, about $9\frac{1}{4}$ lbs. in weight, I recommended that the bullet should be 480 grains, and 75 grains of powder on account of the recoil. I also considered that for a military weapon 480 grains was the best weight for the bullet, because the 480 grains and the 530 grains have both the same trajectory with 75 grains of powder at 800 yards. All ranges less than 800 yards being in favour of the 480 grain bullet, and all above 800 yards in favour of the 530 grain bullet, I thought it was a good compromise. The 480 grain bullet will not shoot so well as the 530 grain bullet, and I adopted the plan of boring it up and putting in a wooden plug in order to lengthen the bullet. There is no bullet that will shoot well that is of less than $2\frac{1}{2}$ diameters long, on whatever construction it is made. I think it is better to be between $2\frac{1}{2}$ and 3 diameters.

1233. When speaking of bullets, are you speaking of cylindrical bullets?—I am speaking of every kind of bullet—it applies to all, no matter what their shape is.

1234. When you put in the plug in order to get length, is it put into the base, or into the front of the bullet?—In order to lengthen the bullet, I bored a hole from the front and put in a wooden plug.

1235. Similar to the present service bullet?—Yes, that plan is now adopted in the service.

1236. You consider that the charge ought to be 75 grains of powder; do you mean the same powder which is at present used in the service?—Yes, it is about the same now as Curtis and Harvey's, which we have generally used.

1237. Have you made any experiments with the compressed powder which Colonel Boxer has been using in his cartridges with a chamber running up the centre?—I have made experiments with compressed powder, and I have had very good results from it.

1238. By using compressed powder you are able to make a shorter cartridge, which is an advantage?—Yes, the charge is shorter.

1239. Do you know anything of the relative strength of compressed powder and the ordinary powder. Evidence has been given that it has greater power, that 75 grains of compressed powder are probably equal to 85 grains of ordinary powder?—I have no facts to enable me to speak as to that.

1240. I think you have stated that you consider the same conditions are equally applicable to a breech-loader as to a muzzle-loader?—Yes, as far as the barrel is concerned. I have found it so in small cannon.

1241. Is it not the fact that the shooting from the breech-loaders has rather deteriorated, and that in match shooting muzzle-loaders are always chosen in preference to breech-loaders?—Yes; there is one thing I may mention, that at the first trial we had at Hythe in April 1857, at 500 yards, we obtained a figure of merit of $4\frac{1}{2}$ inches, and General Hay informed me that up to that morning he had never had a figure of merit of two feet.

1242. That was firing with the muzzle-loader was it not?—Yes, and I do not know that that has ever been equalled up to this day, which is a singular fact. I mean out of doors; we have beaten it many times in the gallery. The best figure of merit that I ever had was $3\frac{1}{4}$ inches, we have often had $3\frac{1}{2}$ inches and $3\frac{3}{4}$ inches. On one occasion, taking all the rifles which were sent to Wimbledon, the average was only four inches, so that it is not likely, unless perhaps with gun-cotton, that that figure of merit would be beaten.

1243. When you say, unless with gun-cotton, do you think that gun-cotton is in some respects preferable to powder?—Yes.

1244. In what respects do you consider it preferable?—There is less fouling with it, and it gives less recoil.

1245. When you say there is less fouling, do you consider that fouling is in a great measure due to the way in which the cartridges are made up, speaking of breech-loaders?—I would rather not give any evidence as to breech-loaders. I have not had any experience, and I have no facts to enable me to speak positively.

1246. I presume you have read very carefully the reports which have been published upon your rifles?—Yes.

1247. It is very striking to observe how different the reports upon apparently the same description of arm are from different regiments; some are very favourable, and some are not. Can you at all account for the difference. Were all the arms manufactured in the same place or were they manufactured in different places?—I do not know; we made about 2,000 barrels. But there is one thing that I may mention, and that is, that we never could tell that one rifle was better than another.

1248. I see that some of the barrels were made at Manchester, and some at Enfield?—I was not aware that any barrels were made at Enfield. The barrels we made were made up at Enfield.

1249. Were there not 8,000 barrels made?—We did not make 8,000 barrels; if there were that number made they must have been made at Enfield on the old principle, which might account for the difference in shooting.

1250. I see that all the reports from India are extremely favourable to your rifles?—Indeed. I have not seen the reports that you allude to.

1251. One of the objections to the system made by some of the regiments was, that there was a great deal of fouling and a difficulty in loading, that the men had great difficulty in pushing the ramrod down, a difficulty which I suppose would not exist in the case of a breech-loader?—No. We have never experienced that difficulty if the powder has been good.

1252. With regard to the rifling, what twist do you consider is the best?—One turn in 20.

1253. That is the ·451 bore?—Yes.

1254. With an uniform twist?—Certainly.

1255. Do you still consider the barrels which you submitted in 1857 the best with regard to shooting?—Undoubtedly; the whole thing was completely worked out then.

1256. The barrels, I believe, were hexagonal?—Yes, all hexagonal. Mechanically speaking, there is no form so good or so easily made as the hexagonal when proper tools are employed. I may mention that we are at the present time making 9-inch shot of 320 lbs. weight each, and the wages paid for making the shot ready to go into the gun after casting, is 3*d.* each.

1257. Do you attribute this to the facility with which that form can be obtained?—Yes.

1258. Is it not the case that Westley Richards uses octagonal rifling?—Yes.

1259. But he calls it your system of rifling?—Yes; he had a licence from us. We did not wish to part with the mechanically fitting bullet, and the octagonal form of that small size is not as well adapted for the mechanically fitting bullet as the hexagonal.

1260. For the hexagonal bore of ·451, do you consider cylindrical bullets as well adapted as hexagonal bullets?—No; but I consider that the cylindrical bullet is as well adapted for the hexagonal as for any other form of rifling; the mechanical fitting bullet has a peculiar merit of its own.

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1261. Will you be good enough to state what its peculiar merits are?—It admits of the addition of a little tin, and you get by that means three times the penetration through boards. It keeps its form better, and it shoots a little better, however good the powder is. Then again, you can fire a steel bullet which will penetrate half an inch of iron plates, that is an advantage it possesses, and in fact, you can use any kind of bullet you choose.

1262. I suppose the disadvantage of a muzzle-loader for a military arm is that the hexagonal bullet has to be put accurately into the barrel?—No; you cannot put it in wrong.

1263. Is there any reason why it should not be equally applicable for military purposes as other kinds?—No, I conceive not. The cylindrical bullet may be put in anyhow, whereas the hexagonal bullet can only be put in one way; there is that difference.

1264. You do not know perhaps whether the hexagonal bullet would be adapted for breech-loaders?—I am working that out. We sent in a barrel which was not right as to its weight, and we withdrew it; we made a hexagonal cartridge. I have brought it with me (*handing in the same*). I have laid it for the present on one side, as we were not going to compete.

1265. It will probably take a considerable time before you have completed your experiments?—Yes. I am going on now with gun-cotton for small guns.

1266. Do you find any ill-effects from the gun-cotton, because it is more easily affected by damp?—I have not made any experiments with gun-cotton since Baron Lenk was over here. I allowed him to have the use of the gallery, and I lent him some steel barrels; we had some experiments made then which were very satisfactory as far they went, but afterwards I could not get any gun-cotton to go on with; and I have not since renewed the experiments.

1267. Do you know why the Austrians gave up gun-cotton?—I do not know.

1268. Are there 75 grains of powder in the cartridge you have handed in?—Yes, and a 480 grain bullet with a hollow through it.

1269. Would not such a cartridge be expensive to make?—No, unless we had a difficulty in getting the copper thin enough; it ought not to be an expensive cartridge to make, it is very simple, the head of it is all in one piece.

1270. Do you find that copper is preferable to brass?—I must say again that I have not had sufficient experience to speak positively upon that point.

1271. The Americans use a copper cartridge, but they seldom use large charges of powder, it seems that the copper cartridge is hardly strong enough to stand a large charge of powder?—I do not know how that is. We make the base of that out of one solid piece (*pointing to the cartridge*), and we have tried it sufficiently to be able to say that it will stand 85 grains of powder.

1272. Could that description of cartridge be made of uniform quality in large quantities?—I do not see any reason to doubt it.

1273. Of what material is the head of the cartridge made?—That is made of gun metal, which is a mixture of copper and tin.

1274. And turned down?—Yes; it is made very cheaply, as its construction is very simple.

1275. Is the bullet larger than the bore, and does it therefore require forcing into the barrel?—No; it goes in quite easily.

1276. How much of the bullet projects from the chamber into the rifling?—The rifling for this cartridge is all hexagonal; there is no cylindrical part.

1277. Then there is no chamber, I suppose?—Yes; you will perceive that the bullet is smaller than the case, and therefore the barrel is chambered out for the case, but it is chambered out hexagonally.

1278. How far does it project from the chamber into the rifling; about that distance (*describing*)?—Yes; the copper fits right up to the end of the chamber.

1279. What lubrication do you use on that bullet?—We use two discs with a little wax between them, the same as we use for the muzzle-loaders. I designed that cartridge to shoot as well as a muzzle-loader, and it will, with as low a trajectory.

1280. Of what is the lubrication composed; is it beeswax?—Yes; beeswax and a little grease to make it consume the better.

1281. Have you tried any experiments with that cartridge to ascertain whether it will shoot as well as a muzzle-loader?—Yes.

1282. Do you consider that it is unnecessary to have a hollow at the base of the bullet for expansion?—There is very little expansion in that bullet; it is very trifling; only just sufficient for easy loading.

1283. With regard to the locks of military rifles, do you think that any improvement could be made upon them?—Are you speaking now of breech-loaders?

1284. Yes.—I should think so. They could be made more simple.

1285. Do you think there would be any objection to using a spiral spring lock?—No, not in itself.

1286. How would you propose to simplify the present lock for a breech-loading rifle?—That would much depend upon the arrangement for breech-loading.

1287. Might you not entirely change the present lock for a breech-loader?—Yes.

1288. But you have not turned your attention particularly to that point, have you?—No.

1289. As far as I remember, I think the rifle that you sent in was not fixed into the stock by bands?—No; the barrel slid in lengthways.

1290. How is it fastened to the stock?—It is moved backwards and forwards by a lever and toggle joint; it is a description of breech-loader which has been used a good deal in Belgium as a sporting gun.

1291. Have you seen any repeating rifles that you consider good for military purposes?—No. I can give you no information about them.

1292. If the Committee required to be supplied with barrels for experiments, could you furnish them at once?—Yes.

1293. And if we were supplied with your barrels, it might be necessary to chamber them in a different way?—Yes.

1294. In accordance with the length of the cartridge we should use?—Yes.

1295. Would there be no difficulty in that?—No.

1296. Might not that affect the shooting of the rifle?—The cartridge will affect the shooting, undoubtedly.

1297. By shortening the chamber of the present barrel, you would not affect the shooting?—No.

1298. Do you find that your rifles lead at all?—No. The Committee I presume are aware that the Chassepôt rifle has my bore.

1299. Is it not ·433?—No, I am told it is ·451; but it has a lighter bullet—somewhere about 360 grains, but I think that they have made a mistake in the weight of the bullet.

1300. Do you know anything about the Chassepôt, how it shoots?—No; but I am told that it does not shoot well.

1301. It appears that many of the reports made upon the Whitworth rifles that were furnished to the troops are extremely satisfactory, but one or two of them are not so much so. Can you at all account for that?—No. I should hink that there must have been some irregularity in the ammunition—perhaps the diameter of the bullet was too great. Sometimes bad paper will cause a good deal of trouble. I think it must have been from the ammunition being badly manufactured.

1302. But in a breech-loader you would not use any paper?—As I said before, I cannot speak from experience, but I think it would be advisable to use papered bullets, even in breech-loaders.

1303. If your ammunition was properly made up, would there be any chance of the paper coming off?—None whatever, if it is properly made up, but sometimes they get young boys who are learning, to make up cartridges, and then bad ammunition gets passed.

1304. Do you think that occasionally wild shots might occur from a piece of the paper which is put

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round the bullet sticking to the bullet in its flight, and throwing it out of its proper direction?—Yes, I think that might account for it, but in the gallery, when we have the ammunition properly made up, we never have a wild shot.

1305. Do you account for that by having had the ammunition more carefully made up?—Yes, and by having everything right. I am speaking of hexagonal bullets. In the gallery all the machine shooting is done with the hexagonal bullets.

1306. (*Captain Rawlins.*) When speaking of wild shots, do you think that the gas, on the first ignition of the powder, could get in front of the bullet, and if so would that be sufficient to account for wild shots in breech-loaders?—I have had no experience except with the one I sent in, and when I found we could not compete I laid it on one side, and the thing has not been proceeded with. I have brought with me some diagrams which I thought might be interesting to the Committee, just to shew them how I have worked the thing out for a small gun, and which of course applies to others (*handing in and explaining the same*). I have already stated in a letter that the gallery at Manchester is at the disposal of the Committee.

1307. (*Captain Mackinnon.*) You would recommend for a military gun a bullet of 480 grains and 75 grains of powder; is that the heaviest charge you would use?—No, I would use a heavier charge if you think the men would stand it—85 grains of powder are what I should like for the ·451 bore.

1308. With a cylindrical bullet of 480 grains?—Yes, because it would give so low a trajectory; the only objection to it is the recoil, but you always find that good marksmen do not care about the recoil, while the others do.

1309. Would you have hardened bullets?—Yes, hexagonal bullets.

1310. Not cylindrical bullets?—No, you cannot have them sufficiently hard, they would not expand.

1311. That is into the hexagonal grooving, but they would into shallower grooving?—Yes, and they might be slightly hardened for the hexagonal grooving, but not so hard as the hexagonal bullets are.

1312. Would the expansion be certain without a cavity in the base?—Yes.

1313. The cartridge you have produced is in a hexagonal chamber, is it not?—Yes.

1314. And the chamber is of course the exact length of the cartridge case?—Yes.

1315. Do you think that pure beeswax is a sufficient lubrication for a small bore?—I think it is better mixed with a little of Price's lubricant—there is I believe no chemical objection to it.

1316. The lubrication must be on the paper case, must it not; it would not answer in cannelures?—Instead of putting it on the bullet, we get better shooting by having it on the wad—it is much more certain.

1317. You have stated that occasionally the paper might adhere to the bullet on leaving the muzzle of the rifle?—Yes, when the lubrication is put on the paper it is more liable to accident.

1318. Do you attribute that to defects in the manufacture of the cartridge?—Yes.

1319. When ammunition is made in very large quantities, must you not expect that there will be defects in the paper?—Yes, I should say so, but still they ought to be very slight defects.

1320. When fouling takes place in a breech-loader, have you observed that it chiefly occurs within a short distance of the muzzle?—My evidence is not worth anything as to breech-loaders.

1321. The Committee have observed a ring of fouling within about six inches of the muzzle, for which it is difficult to account?—When there has been no fault in the barrel?

1322. No discernable fault. Where there is fouling, would you put it down to a defect in the manufacture of the cartridge?—Not invariably. There might be a defect in the barrel.

1323. With your barrel you would put the fouling down to a fault in the cartridge?—Yes. I may mention that in the way that an ordinary barrel is made it is corrected by putting it over a hollow anvil and striking it, and a man looks through it, which is what we call sighting. They predicted at Birmingham that we should never be able to make a barrel as we should not know how to sight it; that was true enough, we could not sight them, but as I bore them out I do not want to sight them. We bore them out of the solid, and we never correct our barrels—they do not need it. The process of barrel making at Birmingham is a process of correction—looking through them and sighting them—so that when you have got a good barrel it depends upon a lucky blow of the hammer. But our barrels are bored out of the solid, and therefore you can depend upon them. They are all right. We cannot detect any difference when they are fired accurately from the machine. That is the great advantage of this plan of manufacture, and I think it is a great pity that it should not be followed up.

1324. With your system of manufacture would it not occupy a great length of time, and be very expensive to produce a large number of arms?—No, you can produce any number.

1325. Do you mean by multiplying the machinery?—Yes, with our machinery we are able to make 50 barrels a week.

1326. Would not the cost be very considerable?—Steel barrels to be made as perfect as they could be wished to be made would probably cost about 25*s.* each.

1327. To be bored out of the solid?—Yes, a finished barrel could be made for about 25*s.* I think we had 2*l.* each for the first that were made, and there have been some made at 30*s.* each. I think they might now be made at about 25*s.* each, if made in great numbers and of steel, and as good as they could be made. Iron barrels cost from 18*s.* downwards, and I have no hesitation in saying that a steel barrel would last out three or four iron ones. You would have the very best thing that could be made, and in my opinion with very great economy. I am waiting until the breech-loading system is settled, and then I mean to try again.

1328. Do you mean the mechanism of the breech?—I mean until it is decided what kind of breech-loader is to be used.

1329. Supposing it was doubtful which of three or four systems of breech-loading were the best, could you adapt your barrels to any of those systems?—Yes, to any system.

1330. And in a very short time?—Yes, all the machinery would come in—it does not matter which system is used.

1331. You have stated that you thought the French had made a mistake, and that they used too light a bullet in the Chassepôt?—Yes, as regards the bullet, it is a mistake. It would be very destructive, as it has a very low trajectory at 300 or 400 yards; but I think 480 grains as light a bullet as you ought to use with a view to its being effective at a long range.

1332. Have you worked out the trajectory of the 480 grain bullet?—Yes.

1333. Can you state what is the highest t of par the trajectory?—I do not remember, but it is exactly the same with 75 grains of powder at 800 yards as the 530 grain bullet.

1334. With the 85 grains of powder that you recommend, there will be a flatter trajectory?—Yes, and the shooting would be very good.

1335. You do not remember what the highest part of the trajectory was with 85 grains of powder and 480 grains of lead?—It was 7 feet 6 inches at 500 yards.

1336. (*Mr. Ross.*) I suppose that, strictly speaking, in order to get the lowest trajectory combined with accuracy at each range, you ought to have a particular bullet for each range?—Yes, of course.

1337. What are your reasons for preferring an uniform twist to an increasing one?—Mechanically speaking, you can get an uniform pitch more perfect than the other; which is a varying curve. I think the diagrams I have shown you, prove that there is really no disadvantage in an uniform pitch or in a

very quick pitch. The Committee will see in the diagrams I have shown that there is one with one turn in 10 inches; that is double the pitch that I ever recommended, and there is no disadvantage in its use; therefore I do not see what is to be gained by an increasing pitch.

1338. It has been stated that in order to get the same rotation with an increasing twist, the bullet may have only to perform one turn in the barrel, whereas with the uniform twist it may have to perform two?—Yes; but that is all imaginary. When you come to work it out practically, you find that there is no advantage; on the contrary, there is an advantage in the other. Most of the advocates for an increasing pitch have imagined that with an uniform pitch, especially when it was quick, you were liable to burst your gun with so great a strain; but the great strain upon any rifle is not in giving the rotary motion—it is in starting the shot. The strain to the gun is in getting over the *vis inertia* of the shot.

1339. Is there as great a strain in firing a shot from a smooth-bore gun as from a rifled gun?—If it is a long shot, I say yes; but it depends much more upon the length of the shot than upon any amount of rifling ever given in practice. The moment the shot is started the gun is relieved, and whether the shot gets one-tenth of a turn or none at all, appears to me to amount to very little. I have had experiments made by drawing a shot through a barrel with different degrees of rotation, and the difference has not been perceptible.

1340. You have tested the resistance in that way?—Yes; but it is all imaginary; when you come to work it out, it has no existence.

1341. I suppose that people imagine, when a bullet takes only one turn instead of two, there is less friction?—Yes. I should strongly advise the Committee to look into this book; they will see what is said about the Purday and Lancaster rifles.

1342. (*Chairman.*) What is that book?—It is a report of experiments with small arms carried on at the Royal Manufactory, Enfield, in 1852.

1343. (*Mr. Ross.*) You are decidedly in favour of having paper on the bullet?—Yes.

1344. In a breech-loader you would still use paper in preference to a naked bullet?—Yes.

1345. Do you think there is a danger of a naked bullet leading the rifle?—Yes.

1346. (*Chairman.*) Do you see any objection to using two sorts of ammunition, one with heavier bullets for a long range, and the other with lighter bullets for a short range?—No, I think that is desirable; and I think I have stated that, in a letter which I addressed to the Committee. Of course, a light bullet is desirable on account of the weight of the ammunition; but in special cases, it might be very desirable to have long range bullets.

1347. You have already stated, I think, that if we were to send you certain breech mechanisms, you could fit barrels to them, but we should have to give you, I suppose, the length of the cartridge?—You would merely have to state what would be the weight of the powder and the weight of the projectile that you had decided upon.

1348. And the description of the cartridge case—would you object to having that given you, whether of coiled metal or not?—No, certainly not. I would strongly recommend you not to throw away simple copper without having it properly tried, because I think the evidence afforded in the American war shows that when the copper is really good (and there is great difference in it) it will stand.

1349. The cartridge you have produced has a much stronger base than the American cartridge, has it not?—Yes, a much stronger base—we made it to stand 85 grains. The base is very important; we make this metal ourselves, but we cannot make the copper. It is turned, and would be made by boys very cheaply, and with very simple tools.

1350. Would you be willing to submit the rifle which you sent to us before for experiments?—Yes, I would be very glad indeed to render the Committee any assistance that I could, without reference to anything except really rendering assistance. I should be very glad, with the knowledge I possess on the subject, to advise you in the matter.

1351. You have a breech-loading rifle which you consider very good for shooting, have you not?—The breech-loading arrangement of rifle that I have I was pleased with as a shot gun. My keeper has one of them, and I know many gentlemen who have them. I adopted it because I thought it as good as anything I could make; but I have put it on one side until I see what is likely to come out.

1352. I understand that although you would be prepared to fit your barrels to breech mechanisms, it is rather a portion of your system to have hexagonal chambers in your rifles, and, therefore, hexagonal cartridges?—Yes; with regard to the bore of this rifle, and to its rifling and the shape of the projectile, I have no doubt whatever it is the best that can be worked out—that I am satisfied of. As to all the other parts, that is quite another thing.

1353. But a hexagonal chamber is part of your system?—Not necessarily. I prefer the hexagonal bullet, but can use either it or a cylindrical one. It might be found desirable for military reasons to use for ordinary purposes a cylindrical bullet of 480 grains, and for long ranges and great penetration the hexagonal bullet of 530 grains.

1354. (*Captain Mackinnon.*) That would require different chambering, would it not?—In the breech-loading arm it would.

1355. (*Chairman.*) Have you any rifle ready now that we could make experiments with, using that description of ammunition?—Yes.

1356. And you would be willing to submit it to the Committee for experiments?—I should wish to do so, but I think it would be much more convenient to make the experiments in the gallery, where there is everything ready. If you like to send down a person, the experiments may be made in the gallery with my rifle, or any other. I would give you the services of a man who is accustomed to this sort of thing, and you would, I think, get on much better, being independent of the weather, and having all the conveniences at hand.

1357. Could the cartridges be made of uniform quality in large quantities?—Yes, certainly, with proper machinery.

1358. (*Captain Mackinnon.*) With a cylindrical bullet partially hardened, which you would recommend, do you think the expansion is given at the first blow of the powder.—Yes; but you will find that one powder will expand a bullet, and another powder will not; that was my great difficulty at first. I was very much pleased when I succeeded in catching a bullet without damaging it. I was then able to see the different amounts of expansion produced by different kinds of powder.

1359. When fired out of barrels of different lengths?—Yes, we worked that out also, and we determined at last upon the match rifle being 36 inches long, as giving the best results. In my experiments with the 2-pounder guns, of which we have been making many, we catch the projectiles and fire them over again; they penetrate fifteen feet into bran, and are not damaged.

1360. (*Chairman.*) Do you consider that you would get better shooting out of a 3ft. 3in. barrel than out of a 2ft. 8in. barrel?—No.

1361. Does the difference not affect the shooting?—No, you get a little better sighting, but you do not get better shooting. I think that a barrel of about 30 inches long will shoot as well as one of 40 inches.

1362. You have stated that the match rifles were made 36 inches long?—Yes.

1363. Why did you give that length?—It is better for accurate shooting, because you get a greater distance between the sights, and then, again, you are obliged to have the weight 10lbs. on account of the recoil.

The witness withdrew.

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WESTLEY RICHARDS, Esq., examined.

1364. (*Chairman.*) I believe you have been engaged for a long time in the manufacture of military rifles and others?—Yes, both.

1365. You have had very great experience?—A good deal of experience.

1366. The requisites which the Committee consider of most importance in a military arm are, first, a low trajectory, and next, if possible, accuracy at long ranges?—If the Committee will permit me, I will hand in a copy of the qualifications which I have always considered it is desirable to attain, and which I have kept in view in the manufacture of a military arm—each qualification is put into a numerical value. Those under heading "A" may be ascertained absolutely and without doubt; there cannot be any dispute about them. The others, under letter "B," may be more matters of opinion. I put down these qualifications when I began first to consider the question of military arms. I have never been able to obtain any official declaration of what are considered the qualifications a military arm should possess. I think it is most desirable, before we can proceed satisfactorily, to know the opinion of the Committee, or of the Horse Guards, as to what it is they require to be produced. The paper which I will now hand in contains merely my own views as a producer.

The following paper was handed in:

QUALIFICATIONS suggested as essential in a BREECH-LOADING INFANTRY MUSKET.

The weight of the arm, together with its bayonet, has been determined by the Horse Guards, and should not exceed 10 lbs.

The maximum charge should not exceed grains of powder, with a grains projectile.

	Estimated value in Marks.
A.	
1. Flatness of trajectory	150
2. Rapidity of fire, independent of aim	100
3. Accuracy	150
4. Penetration	100
5. Capability of continued firing, and of resisting exposure to wet, &c., without being cleaned or oiled	200
6. Lightness of arm complete	100
7. Lightness of parts by which the breech is closed, including the breech itself	50
8. Lightness of 60 rounds of ammunition	150
9. Least cubic measurement of 1,000 rounds of ammunition	100
10. Cheapness of arm	80
11. Cheapness of ammunition	140
12. Light recoil	30
B.	
13. Strength and durability in all its parts, stock, lock, and fittings	75
14. Strength, safety, and durability of breech-loading arrangement, that arrangement being preferred which requires the least oiling, cleaning, or keeping in repair	100
15. Simplicity and fewness of parts with a view to facilitate repairs by sergeant armourers when on foreign service to whom parts are supplied	75
16. Simplicity and fewness of movements, and those of a nature best adapted to the drill of the infantry soldier, also best suited for loading when flat on the ground, or in defending positions in which it is desirable to get the greatest number of men to fire on a given point at the same time	100
17. Durability of ammunition, its power of resisting in the greatest degree, heat, dryness, cold, wet, and damp	150
18. Ammunition best suited to production by children's labour, in which supply is combined with a power to increase the production to any extent in case of sudden demand. Also such as could be made up by soldiers themselves in case of emergency	100
19. Safety in store and in transit	50
	2,000

1367. In order to procure a good arm, you think that some opinion should be expressed on the points enumerated in the paper handed in?—Yes, I think it essential that we should be informed of the qualifications the committee are desirous of obtaining, and also the proportionate value they set on those qualifications, we should then turn our chief attention to those that had the highest numerical values attached to them.

1368. To produce flatness of trajectory, and accuracy at long ranges, what bore do you consider the best?—I think that ·450, taken as a whole, for a gun to weigh 8½ lbs. or 8¾ lbs., is the best.

1369. Do you think that a gun weighing 8¾ lbs. would be heavy enough?—Yes, I do. I think a very serviceable barrel may be got with a gun weighing 8¾ lbs., the maximum length of the gun being 51 inches; that would give about 3 feet for the barrel.

1370. Do you think that a barrel 3 feet in length would be the best?—I do—better than 3 feet 3 inches, and better than 2 feet 9 inches. We find that we get a lower trajectory with a barrel 3 feet long.

1371. With respect to the rifling and grooving of a barrel, do you still think that what is called a Whitworth barrel is the best?—I never use that. I always use the octagonal. I do not find that the hexagonal form is suitable for breech-loaders.

1372. In what respect do you find it fail?—The grooving of the hexagon, as used by the Whitworth, is too deep for a breech-loader; it makes the angle of elevation high, and the shooting is not good. I have not tried a mechanical fitting bullet, that would require to be used with a metallic cartridge. I have found great difficulty, in particular kind of weather, with the small-bore gun, when a metallic cartridge is used as there is no wad to pass up the barrel in front of the bullet as in the paper cartridge I use, this wad lubricates the barrel and prevents fouling in all weathers. The metallic cartridges which are used without a wad passing up the barrel in front of the bullet at each shot I have found to foul at the muzzle 8 or 9 inches down.

1373. Has that been when firing with Whitworth's bullet with a wad behind?—I have never fired with a hexagonal bullet, but I have tried a greased wad behind other bullets and have not found it prevent fouling at the muzzle of a small-bore 3-feet gun. In trying experiments with a view of diminishing the angle of elevation as much as possible I have found a very shallow rifling with a bullet pushing up into the rifling, a soft wad for fireblock at the base of the bullet, and 85 grains of powder to be the best at 600 yards, I have got a bullet up with 1 degree of elevation, but this gun also fouled at the muzzle after the eighth shot. The bore of the gun was ·450 the bullet was a ·441 bullet made up into a cartridge with a paper forepart and a metalilc base.

1374. When you say that the trajectory was very high when firing with a cylindrical bullet from a hexagon, it was not high, I suppose, in comparison with the present service arm?—No, only in comparison with an arm of the same bore and octagonal rifling. That is my comparison with the service arm. My shooting is the mean of 12 months, both winter and summer, and in all kinds of weather. The shooting there given of the service arm was taken at Hythe by General Hay in my presence on a particular day. I have had occasion to compare my gun with the Remington, which is a ½-inch gun, and that is the result of the comparison, which you will see is in favour of the ·450 bore, the same charge of powder and weight of projectile was used. (See Comparison Paper.)

1375. When the Remington cartridges were fired from this gun, did they perform properly?—Yes, they were all of them good; it is not more than two months ago, and they were made in America.

1376. When you say that you have not tried the mechanically fitting bullet with the hexagon, is there

any objection to it for breech-loaders ?—I have really had no experience. I have never gone into the question. It requires a good deal of machinery to make them, and they require to be well fitted. In a military arm there is great difficulty in working so close, you require some toleration or you have so much waste work. In all my guns I can give plenty of toleration.

1377. Are you decidedly of opinion with regard to cylindrical bullets, that the octagonal form of rifling is the best?—Yes, there is no doubt of it for cylindrical bullets and for breech-loaders.

1378. I think you stated that you get shallowness of grooves by using octagonal barrels?—Yes, I get ·030. I find that that is the best upon the whole. I make my octagonal grooves ·030 deep. I get better shooting, and seldom get any stripped shots. I get sufficiently good shooting, and I think a sufficiently low angle with 70 grains powder.

1379. Do you consider there is no danger of such shallow grooves wearing out?—I do not call ·030, a shallow groove, it is only shallow in comparison with the hexagon, I consider it a deep groove; ·005, ·010, ·015, I call shallow grooves. I do not think that those will wear out in a breechloader as the wear is uniform, but with a very shallow groove if you get a barrel a little too large, you are liable to have striped shots, and if you were to have 3 or 4 striped shots in succession the barrel might lead, which would spoil the shooting.

1380. Is there not a danger of the barrel from continual wear increasing in size, and therefore making the shooting bad?—I never find it increase much. The only difficulty is that everything requires to be made too close for military work when the grooving is very shallow.

1381. For a military arm, what barrel do you consider is the best?—I consider ·450 the best.

1382. With octagonal rifling?—Yes.

1383. And with what shallowness of grooves?—I have found upon the whole about ·030 the best; that is, I should make the receiving plug ·028, rejecting the plug of ·032, leaving that margin, and say a bore from ·448 to ·452.

1384. Do you think that leaving so much margin would not cause a deterioration in the shooting?—I do not find that it does. I have compared the guns constantly, ·048 and ·052; it does with very shallow rifling, not otherwise. If I give 4 thousands (that is ·004) of toleration I can get guns done cheaper than if I only give 2 or 1.

1385. Is it still your opinion that the maximum charge should be 70 grains of powder, and the maximum weight of the bullet 480 grains?—I find that the recoil is rather too much for the 8½ lb. gun; with 75 or 80 grains.

1386. If you increased the weight to 9lbs. 8 ozs., would you object to a heavier charge?—You might, I think, add to the charge 5 more grains.

1387. That would increase the charge to 75 grains?—Yes.

1388. With the same weight of bullet?—Yes.

1389. Would that be suitable for 75 grains of powder?—They do not shoot so well with 75 grains as with 70 grains.

1390. At what range?—At 600 yards. I have never made a careful examination at 800.

1391. Do they shoot as well with a lower trajectory at shorter ranges, up to 500 yards?—Yes, you get a little lower trajectory, I think you hardly want the five extra grains of powder. With my gun, I prefer the light gun and the light charge.

1392. Therefore you are of opinion that for a military arm, 70 grains of powder with a bullet of 480 grains, would be about the best?—Yes, as it enables you to use a 400-grain bullet as well. I have another comparison here which I will hand in, it is a comparison with the Chassepôt in which a projectile of 400 grains is used (*handing in the same*).

1393. With a 400-grain bullet you get a low trajectory at short ranges, do you not?—Yes, but the difference between the two is not so much as you would imagine, you will see by the paper. I have handed in about what it is. The comparison is not an extended one, not more than three or four days shooting—it was done at the time I was trying did the Remington gun. The Chassepot had 85 grains of powder to my 70 grains, and therefore my principle of chamber is, I consider, 15 grains of powder better than the Chassepot gun.

1394. Can you fire different ammunition from the same gun?—Yes, I now fire a 400 grain bullet and a 480.

1395. How do you get an increase of length?—It is the same length, the 400 grain bullet and the 480 grain bullet, the charge of powder being the same, the only difference is in the bullet.

1396. How do you get them of the same length?—I measure to the rim of the bullet; it takes its bearing against the rim.

1397. Is the shape slightly different?—It is the same shape but shorter; the 400 grain bullet is shorter than the 480 grain bullet. I did get them the same length by making the 400-grain bullet hollow, but there was no advantage in it.

1398. Is it your opinion that a solid bullet is better than a hollow one?—I am decidedly of opinion that the solid bullet is better than the hollow one, the penetration is much better, the bullet should also be a hardened one.

1399. Are there no commensurate advantages in the hollow bullet?—I do not see any in the hollow bullet, with a gun of that bore, there may be with a larger bore; with a small-bore a 480-grain bullet is sufficiently long for accuracy.

1400. Have your bullets a cavity in the base for expansion?—No, they are perfectly solid.

1401. Do they expand?—No; they are driven through; they fit the chamber.

1402. Do you consider the principle of driving or forcing, better than the principle of expansion?—For the paper cartridge with a lubricating wad at the base, I consider the principle of a rim at the base of the bullet to be driven through the rifling to be the best; for a central fire-cartridge this rim acts also as a stop and prevents the cartridge being driven forward when the cap is struck; if a lubricating wad were to be fired out in front of an expanding projectile made the size of the bore it would strip. This is our experience and we attach great importance to firing out the lubricating wad in front of the bullet.

1403. And all you have been saying has been with reference to a paper hand-made cartridge?—Yes, except the one I told you of, with which I got an angle of elevation of 1 degree at 600 yards; that was a cartridge without any wad in front, a metallic cartridge. There are two principles of metallic cartridges—there is one with a metallic base and a paper fore part, so that the bullet goes up into the rifling—that is the one with which I can get the best shooting and the lowest trajectory; it is a solid bullet of ·441 with two folds of paper ·006 on the bullet paper being lubricated.

1404. What kind of lubrication do you use?—The same that I have always used; it is a kind of soap. I have used it for 10 years.

1405. Will it stand exposure to climate?—Perfectly.

1406. Have you made any experiments with compressed powder such as Colonel Boxer uses?—Yes, I did some years ago.

1407. Did you find that it was applicable for military purposes?—I did not get such good results as with loose powder, the angle was greater and the shooting not so good from the number of dropping shots, which I attributed to imperfect combustion.

1408. Supposing that the means of removing that dirt and getting rid of other objections was discovered, would you not obtain a shorter cartridge by using compressed powder?—Yes, you would slightly; there is not the least objection to it if uniformity of combustion can be obtained.

1409. One of the objections, I believe, to a small bore, is the length of the cartridge that is used?—In

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practise I really have never found that an objection. I have made many millions of them, and I have never had a single complaint made about the cartridges, they have been used at the Cape and in India and all over the world for years.

1410. Paper cartridges require to be kept in their packages, do they not. You cannot put them loose into the pouch, and rattle them about for an hour or so, without damaging them ?—You can take them out of their packages of tens and put them into a pouch, and travel them about as much as you like. I think you will find that some reports have been published to that effect. Sir William Wiseman so reported, also Sir Hope Grant in China.

1411. You could not cram them into your pockets very well, could you ?—There is no reason why you should not, it would not injure them.

1412. Would they not break ?—No ; I have never had a single complaint about the ammunition breaking.

1413. Do you consider there is any advantage in ammunition made completely of paper, as compared with ammunition made partly of paper and partly with a metal base ?—I think you can get a lighter, cheaper, and as good a cartridge and it goes into less space.

1414. You mean the paper cartridges ?—Yes.

1415. As to cheapness, what would be the cost of your paper cartridges ?—That is a matter which so much depends upon whether very large quantities are made, and also the price at which you could buy the paper. I use very good paper, I have never tried to alter the paper or get it cheaper.

1416. You might possibly use an inferior kind of paper, if the cartridges were made in large quantities ? —Yes ; you might get a cheaper kind of paper, I do not know if it would be equally serviceable.

1417. Do you consider that an improvement could be made in the locks of rifles, supposing an entirely new arm to be made ?—I think it would be very difficult to get anything more serviceable than the present lock.

1418. I suppose you might get something cheaper ? —Yes ; there would be no difficulty in putting a lock in a block, but you would not get the same action with it, and it would be much more liable to rust, and get out of repair, but it could be done.

1419. Have you seen any spiral spring locks ?—Yes, but I have never been an advocate for them. You cannot get the same action with them as with a main-spring.

1420. Not sufficient action in a spiral spring to explode the cap ?—I have never tried it sufficiently to say, but you do not get so short and quick an action. It is a thing that we have been trying for years to do away with the expense of the lock, but whatever has been tried has never been satisfactory. You get occasionally some springs that are very good, and then you get a quantity of bad ones, and if they remain long in store, they rust and deteriorate.

1421. You think that if they remain in store they will get injured ?—Yes. I think if they have once been rusted from the escape of gas from the cap they will always be liable to it.

1422. By using a paper cartridge, according to your system, with a wad, I suppose you get equally good shooting with a breech-loader as with a muzzle-loader ? —The shooting from the breech-loader is not quite so good as we can get from a muzzle loader, but nearly so, the shooting we now get I consider good enough for a military arm.

1423. What do you think is the cause of the deterioration ?—The whole principle of loading is altered.

1424. Do you get equally good shooting from a breech-loader now as you did formerly from a muzzle-loader ?—We get better shooting now from a breech-loader than we could formerly do from a muzzle-loader.

1425. What principle has been altered ?—One is that you put the bullet down the muzzle of the gun, and the explosion sends it into the grooves ; in a breech-loader it has to pass out of a cartridge into the rifling.

1426. Why are you obliged to drive it through ?— We find the principles of driving through the best, as it tenables us to use a solid bullet and a lubricating-wad ; he one gives penetration the other prevents fouling.

1427. In fact you must force it through to a certain degree ?—On my principle you must force it through, but it can be done without ; I prefer to force the rim at the base of the bullet through, and I do not find that that process increases the angle of elevation.

1428. That is in fact the only way by which you can get rid of the fouling ?—Yes, that is my experience ; I have a gun now that I should think has fired 12,000 or 14,000 rounds. I have placed it in the open air ever since last summer ; it has never had a drop of oil put on it, and it is just in as good working order now as the day it was first put out.

1429. Do you consider that fouling could be done away with by using either other descriptions of gunpowder, or other material, rather than gunpowder ?— That I am not able to say, but the fouling that I find most injures the shooting is on particular days in summer when metallic cases are used with no wad fired out in front of the bullet, the gun fouls at the nose eight or nine inches down, and spoils the shooting, this defect my plan entirely overcomes.

1430. How do you account for guns fouling ?— When the barrel gets hot, a deposit lays hold of the barrel ; when you are loading a muzzle-loader you wipe the barrel down every time, but in a breech-loader this is not done.

1431. Can you explain why it is that the deposit is laid hold of as you say by the barrel 8 or 9 inches from the muzzle, which is not the hottest part of the barrel, why does it not take place lower down ?—I suppose it is because all the lubrication you put on the paper is exhausted by the time it gets down there. I know it is the fact, but it is very difficult to tell the cause of it.

1432. In what sort of weather do you get the most fouling ?—When there is a dry easterly wind.

1433. Not during the frost ?—I do not think we get so much fouling in the winter. I have hardly ever heard a complaint of a gun fouling in the winter ; I thought, when I got the metallic cartridge, to answer for a small bore that I had got a very good gun, and I shot with it all one winter ; I never found that there was anything the matter with it, but in the summer after firing eight or nine shots, I began to get wild shots and this was in consequence of fouling at the muzzle.

1434. I suppose, in order to test a gun, it would be more telling to fire 100 rounds very rapidly, and then fire for accuracy, than to fire 200 rounds with pauses between the shots ?—I should think it was, but I never tried it. I know that the gun I have mentioned, has had 12,000 or 14,000 rounds fired out of it. I could fire 100 rounds out of it, and then fire for accuracy and get good results. Upon the whole I find, by comparing it with any other gun, that I have tried, there is always a great majority of marks in its favor, in every case when compared by the table I have handed in.

1435. It is your opinion that to produce a really good gun, certain requirements ought to be distinctly laid down ?—Yes ; to produce what is wanted I do not say to produce a good gun, but I say that it is the business of the consumer to say what is wanted, and we are glad to produce anything if you will only say what you it is you want.

1436. (*Capt. Rawlins.*) Do you think that compressed powder is the cause of more fouling than ordinary powder ?—I have never tried it sufficiently to be able to say, but I have a general impression about it ; when I tried it some years ago, I did not get quite such good results ; its chief defect was the dropping shots.

1437. Will you be good enough to explain what you meant, when you said that the compressed powder was dirty, did you refer to fouling ?—I do not know whether that was the reason, but I did not find that the ignition was quite so good, and I also found that the vertical deviation was greater ; we tried all sorts of

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plans to make it ignite better with hollows, we put it in separate parts, in rings, &c.

1438. If cartridges without a wad were used, forcing the bullet would not be necessary, because it would expand in the chamber?—It would not require to be forced then, it would expand in the barrel if pushed up into the rifling.

1439. You could not put the whole of the bullet into the barrel?—No, you can only put the whole of the bullet into the barrel if you make a metallic base to a cartridge with a paper front. There is no question that I can get the best shooting on that principle, and the lowest angle, you require a certain space of plain paper, with an inch or an inch and a quarter of metallic base which you cover, and add to it the paper fore part, the bullet being enclosed in the paper in the same way as in the ordinary paper cartridges, the bullet is pushed up into the rifling.

1440. Do you think that you may account for a wild shot sometimes by the gas getting in front of the bullet?—The gas may get in front of the bullet, unless there is some stop; we always put a fire block or gas check; we put a wad at the base of the bullet, that pushes up into the rifling, with our rim bullet, the rim or base of the bullet fits so truly that there can be no escape of gas past it.

1441. Do you not think it would be possible sometimes?—Yes, with a bullet that goes into the rifling of the barrel, unless you put some stop to prevent it; we always put a wad to prevent it and find it answers the purpose.

1442. Does the expansion take place instantaneously?—I think so.

1443. If the bullet fitted tightly, the explosion would expand it immediately into the grooving, would it not?—Yes, but still there is time for a certain quantity of gas to get past, if you do not put in some gas check.

1444. Do you consider that a steel barrel is preferable to an iron one?—If you make it of a material that you can depend upon, there is no objection to it. I think it is better because it is more rigid.

1445. I suppose there would be no great difficulty in getting the material?—I think not, but the present steel barrels are more difficult to rifle; they are not so soft and uniform as the iron ones. If you get good steel barrels, they are very good, but we constantly get hard places in them. When the question is settled that you are to have steel barrels, and we can do without brazing them, or putting them into the fire, I have no doubt they will be got to answer.

1446. Do you think that a naked bullet is better than one with paper round it?—I have never found it so; I have found that paper is the best medium between the bullet and the barrel.

1447. Why do you think paper is better?—Because I think it holds the lubrication better. In practice we find that we always get the best results with two folds of paper.

1448. Do you think that the barrel would lead without paper?—That I think very much depends upon the inside of the barrel; if you have a rough place in it, it is much more likely to lead.

1449. Do you think that the paper might not adhere to the bullet after it left the barrel?—We never find that to be the case; it may be so with some kind of rifling.

1450. Might you not have wild shots?—Not with an octagon; it is sufficiently large to burst the paper; it comes off in about 30 yards from the muzzle.

1451. Have you made any experiments with repeating rifles?—No, I never have, and I do not think you will ever get a good gun of that kind: it must add to the weight also very much.

1452. Have you tried explosive bullets?—I have tried the shell bullet, but we find that in India they do not care a great deal about them. They use a large bullet there of 900 grains, and 115 grains of powder, and they find that that is sufficient for all purposes—that is, for large game shooting. There is no difficulty in making an explosive bullet.

1453. Do you think that there would be any disadvantage in using them for military purposes?—No, I do not think there would be; they shoot very well.

1454. (*Captain Mackinnon.*) Upon the whole, you prefer your paper cartridge to a metallic one?—I do. I think it is lighter, cheaper, occupies less space, is sufficiently strong for military purposes, and can be made by any one.

1455. They would require a certain supply of wads, caps, and paper of good quality?—Yes, but they are all very easily got. You do not require any machinery—nothing but a stick and a cylinder.

1456. The paper would require to be very good, would it not?—That is not absolutely necessary. We send out with a rifle a couple of sticks to roll the paper on, and a cylinder, and the people make their own cartridges, and we find that that operates as a great inducement for them to have our gun.

1457. Your bullet I think has a rim?—Yes.

1458. In the paper cartridge, does all the bullet go into the grooving, rim and all?—No, it is a taper chamber, and the rim rests against the taper part of the chamber.

1459. Then that is the part of the bullet that is forced?—Yes, there is a slight bite upon it; the force would be very little. The fore part is ·447, and the paper ·006; that gives a very slight bite, but just enough to steady it.

1460. Are the bullets hardened?—Yes, with 1-20th of tin. My gun has been made with a view of combining all the qualifications stated in the paper I have handed in, in the greatest degree.

1461. The twist that you use is an uniform one?—Yes.

1462. Do you disapprove of an increasing twist?—Yes, because it is very difficult to do anything to it. If you get a barrel that is badly rifled, you cannot lead it or do anything to it. We get good shooting out of it, and we used for many years to make nothing but increasing twists. But, as I said before, if you get a barrel that is a little damaged in the rifling you cannot lead it. We cast a plug six or eight inches in the barrel, and then, by putting oil-stone dust on it and working it up and down, we get a barrel into good shape and get cuts out of it; but if you have an increasing twist you cannot lead it, because you cannot get the lead in—the rifling differs in pitch every 10 inches.

1463. You do not object theoretically to an increasing twist, if it gives good shooting?—No, I do not see any harm in it, but I think you put the greatest pressure at the muzzle. We find in practice that they shoot very well and with a very low angle. The theory was that they would not strip, and that the bullet would go gradually into the groove.

1464. Do you put the soap lubrication on the paper round the bullet?—Yes, but we find that the wad is sufficient; we generally do put it on the paper, but it would do without anything. The wad seems to be sufficient at the base of the cartridge to lubricate everything. When the barrel gets warm there is a certain amount which runs down the side of the bullet; after three or four shots, the chamber at the point of the bullet is sufficiently warm to melt the lubrication, and it runs down to the point; it never fouls, and it never requires cleaning. I have had it in India for 10 years, and when it has come back again you might use it just as well as when first made.

1465. Has it also been used in Canada?—Yes, but in Canada you require to have the lubrication made a little softer. I believe I have overcome that difficulty in the breech-loading gun by using a differently shaped hat-cap, which takes the pressure of the wad off the point of the bullet. I have had it out of doors all this winter in the frost, the ammunition and the gun too, and we have found no difficulty in loading it.

1466. In Canada it would have to resist very great cold in the winter and great heat in the summer?—No beeswax will do in Canada with my gun; it becomes perfectly rigid. We sent out to Canada a short bit of wire with a brass ball at the end to push the

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wad forward, and after a couple of shots it comes all right. If you leave a wad in the chamber and it gets frozen, you could not without difficulty push it up, and to obviate that we have made a little short wire pusher, with which the wad is pushed into the end of the chamber, and then you can load. Our guns are principally used in hot climates, in India and at the Cape.

1467. I think you once used a metal cartridge case about half the length of the powder case ?—Yes, and with that principle I find we get the best shooting.

1468. That is used in a different kind of gun is it not ?—Yes, it is upon a different principle altogether.

1469. Where is the lubrication in that ?—There is lubrication all over the bullet.

1470. Is it on the paper ?—Yes, but that in hot weather fouls at the muzzle ; it shoots very well for about eight shots, and then it goes wild in consequence of the fouling.

1471. Have you tried bullets holding the lubrication in cannelures ?—Yes, and I think that it assists them, but we do not use them because we find fouling even with them, in some weather.

1472. (*Mr. Ross.*) I believe your rifles have generally won the Duke of Cambridge's prize at Wimbledon, the competition being restricted to breech-loaders ?—Yes, that has been with a rifle with a cartridge ignited by a copper cap, such as is at present used in the service.

1473. What was the weight of your rifles that were used at Wimbledon ?—The maximum weight was 10lbs.

1474. Do they generally weigh as much as that ?—No, I think that the majority of them have not weighed more than 9¼ lbs.

1475. What weight of bullet was used in those rifles ?—A bullet weighing 530 grains, and 85 grains of powder.

1476. Then when you said that you preferred 70 grains as the charge of powder, and a 480 grain bullet, that was because you meant a lighter rifle, was it not ?—Yes; I reduce the weight of the rifle, but with the 10lb. rifle I think that the other is the best charge, but I question whether the generality of line soldiers would like the recoil.

1477. I suppose the weight of the bullet has more to do with the recoil than the charge of powder ?—I think the charge has a great deal to do with it, but you can put that into figures and ascertain. I have found that with a gun that weighed 8½ lbs., 70 grains of powder and a bullet weighing 480 grains were quite enough. I think that with three diameters you would get the best shooting.

1478. Do you think it is better, in order to lighten a bullet, to shorten it rather than to make a hollow one ?—I think it better to shorten it, as a cavity deteriorates the penetration, and I find even the 400 grain solid bullets shoot well up to 600 yards.

1479. Have you not made breech-loading rifles without any chamber at all ?—No, I do not think we have made any without a chamber. With regard to the qualifications which are indicated in the paper I have handed in, I may add that the best results have been obtained from paper cartridges.

1480. (*Chairman.*) In the paper you have handed in, I observe that the mark of 150 is the maximum ?—Yes. I may remark that I do not think it is of much consequence the being able to soak the cartridges in water, but I can put mine for a week into water, wrapped up in packages of 10 in indiarubber wrappers.

1481. Has the paragraph with regard to the "durability of ammunition and its power of resisting the greatest degree of heat, dryness, cold, wet, and damp," reference to ammunition put up in packets, or to single cartridges ?—I mean cartridges packed in packets of tens, because they are served out in tens.

The witness withdrew.

Adjourned *sine die.*

War Office, Thursday, 20th February 1868.

PRESENT :

LIEUT.-COLONEL FLETCHER IN THE CHAIR.

CAPTAIN RAWLINS.	EARL SPENCER, K.G.
CAPTAIN MACKINNON.	E. ROSS, Esq.

Captain HAIG, Secretary.

Capt. W. H. Noble, R.A.

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Captain WILLIAM HENRY NOBLE, R.A., examined.

1482. (*Chairman.*) Will you be good enough to state to the Committee what position you fill at Woolwich ?—I am an associate member of the Ordnance Select Committee.

1483. How long have you held that position ?—Since the year 1861.

1484. During that time have you made many experiments with compressed powder ?—Yes, I have made a considerable number of experiments.

1485. When did you first begin to make experiments with compressed powder ?—Perhaps I had better state briefly what has already been done. Sir William Armstrong adopted a perforated and compressed charge for the purpose of getting more powder into the bursters of his segment shells, so far back as 1860, but the question of its suitability in this form for cartridges was, I believe, first brought to the notice of the Ordnance Select Committee in September 1862, in a memorandum in which I recommended that experiments should be made with *perforated* and compressed charges of *grain* gunpowder. The following advantages were claimed:—(1) increased uniformity ; (2) higher velocity and, possibly, less initial strain on the gun, that is, more uniform strain; (3) reduction in the length of the cartridge, and consequent diminution in the size of the chamber of the arm in which it is used ; (4) the compressed charge without perforations would not be as efficient, as the rear of the cartridge would only be ignited by the first discharge, and the front part would be liable to be blown out of the gun unignited, thereby causing a loss of velocity and fouling ; (5) decrease of bulk and consequent gain in stowage ; (6) facility in making up cartridges ; (7) cheapness of manufacture ; (8) superior hygrometric qualities, as the perforated and compressed charges could easily be waterproofed. The Committee approved of this suggestion, and a certain number of cartridges of perforated discs of *grain* gunpowder were made up for various arms, according to drawings submitted by me, and amongst others for the Enfield rifle. In November 1862 the first experiment was made with the 12-pounder breech-loading rifled gun, firing charges of compressed granulated powder *without perforations*, and the result was that the un-

perforated cartridges gave a very low velocity as compared with the loose powder. These results are given in O.S.C. Minute 7913, Report on Ballistics, vol. I., pp. 83, 84, and prove conclusively the value of the perforations. These unperforated cartridges gave a low velocity and fouled the gun considerably. A preliminary experiment with perforated and compressed charges of granulated powder was made in the latter end of November 1862 and reported on (O.S.C. Minute 7926). The results were so far satisfactory that the O.S. Committee in their Report, 2595, recommended "that steps be taken to "secure the right of the War Office to use the perforated and compressed charges against any person "who may hereafter patent it." To this the War Office solicitor replied, that "If the discovery was "properly recorded at Woolwich or in this department, it would be good against a subsequent patent."

—War Office Papers, $\frac{82}{B}$, Minute $\frac{}{197}$ 8147. On the 6th of January 1863 perforated and compressed charges of granulated powder were fired in comparison with charges of loose powder from the 40-pounder breech-loading gun. The results are given in O.S.C. Minute, 8246, Report on Ballistic Experiments, vol. II., 1865, pp. 61, 62, and proved that when the compressed charges were perforated the initial velocity was practically the same as with the loose powder, and the uniformity much greater than with loose powder. On the 30th of April 1863 I reported to the Committee, Minute 8970, that perforated and compressed gunpowder had hitherto not given such good results as had been expected from it, in consequence of the tendency to foul and liability to break in transit. That was our chief objection to it. But that experiments had proved that the best results were given in small arms by a compressed cartridge with one large perforation down the centre. Various further experiments were carried out from time to time in connexion with this subject—we tried different degrees of pressure—a different number of holes in the cartridge, &c., all of which are detailed in the Ordnance Select Committee's Proceedings, and Reports on Ballistics for 1863, 1865. Among other experiments are those referred to in Minute 12,461, where a number of perforated and compressed charges were tried in the Enfield rifle, on the 27th of April 1863. The details of this experiment are given in my second Report on Ballistics, volume II., pages 65 and 260, and the results proved that a considerable uniformity was obtained by the use of the perforated and compressed charge. The Committee subsequently directed these experiments to be continued with the Enfield rifle, but I cannot trace that anything further was done, and I believe the subject was dropped owing to the contemplated introduction of breech-loading small arms, and the consequent changes in the nature of the ammunition required. These are the Ordnance Select Committee Minutes, which give the results obtained from the powders (*handing in the same*). Last August I carried out an experiment with compressed cartridges in comparison with loose ones fired from the Snider Enfield rifle. They were proof cartridges, strongly made for the purpose of proving the rifles. We fired 137 grains of perforated and compressed powder, with a 720 grain bullet, and I found that the uniformity was very good indeed—that it took 147 grains of loose powder to equal the velocity given by 137 grains of compressed powder. I do not know whether the Committee are aware of the reference which was made by the President of the Ordnance Select Committee, in his Annual Report for 1865, sec. 54, to this subject. General Lefroy says: "The conclusion to be drawn from these "experiments is, that charges of compressed powder "which occupy less space in stowage, and are less "liable to deterioration from damp, are also more "uniform in effect than equal weights of uncompressed gunpowder, give a somewhat higher initial "velocity, and if they are not too hard, are consumed "in the gun without causing more fouling than com-"mon powder. The best degree of compression is "over two tons and under four tons per square inch, "but the precise amount cannot at present be stated. "The prosecution of the inquiry is tedious from the "long time which elapses between every successive "step, but it is not expensive, and may ultimately "lead to valuable results. As soon as any determination can be come to as to the description of "compressed powder to be tried, it will be necessary to inquire into its effect on the endurance of "guns, and probably also to issue a proportion of "infantry ammunition of the same description, for "the advantage of the reduction in length will be a "strong argument in favour of this ammunition for "small-bore rifles, if in other respects it is suitable. "The general reduction in bulk will be an advantage "for transport; the facility of loading in any position "will recommend it; and, finally, it seems probable "that it will be easy to make each charge water-"proof." I consider that perforated and compressed charges will give very good results in breech-loading small arms, and I brought the subject again before the Ordnance Select Committee at the commencement of the present year, and recommended that some experiments should be carried out in this direction.

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1486. That of course refers to experiments made with muzzle-loaders?—Yes, muzzle-loading small arms.

1487. When these experiments were made with muzzle-loaders, I see that you say in your notes that considerable uniformity was obtained?—Yes.

1488. Does that mean that as great uniformity was obtained with compressed powder as with loose powder?—Greater uniformity was obtained.

1489. Have you any other statement to make to the Committee?—No, I do not think I have anything further to state.

1490. You have stated that you have used perforated cartridges of compressed powder, and also that you had perforated discs; what does that mean?—It means that the cartridge was in different pieces, that is to say, the 40-pounder cartridge would be composed, say, of three discs. I should explain that a difficulty was found with the cartridges for large guns in making them all in one cylinder. We overcame that afterwards, but originally there was a difficulty; we called them discs even when they were made in one piece, but the word "discs" only refers to cartridges for large guns. You may call the little pellet a disc, but the word originally came into use because they were made in small discs, three or four together in a cartridge; but all our cartridges for small arms were made in one piece. And the subject was generally headed in our printed abstracts "*Perforated Disc Gunpowder.*"

1491. You have, I believe, recently been trying experiments with compressed powder in breech-loaders?—The only experiment which I have tried was the one I have just mentioned, in which I fired for the Superintendent of the Royal Laboratory proof cartridges from the Snider rifle.

1492. Have you not tried any other experiments besides that?—No; but as I have before stated, I recommended the other day that some experiments should be carried out in this direction, and it was referred to this Committee.

1493. The Committee has been informed, I think, by Colonel Boxer, that 75 grains of compressed powder are equal to 85 grains of uncompressed powder, but the proportions would not appear to be the same, when you say that 137 grains of compressed powder are equal to 147 grains of ordinary powder?—No, it would not be so from the result of my experiment. Colonel Boxer, however, may have made an experiment of his own.

1494. Are you satisfied that the experiment you made is to be relied on?—Yes, but it is a mere matter for experiment. It might be that the 75 grains of compressed powder were equal to 85 grains of uncompressed powder; but it would depend a great deal

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upon the size of the bore of the rifle in which it was fired 85 grains of uncompressed powder in a ·451 bore would form a very long cartridge, whereas with compressed powder it would be a very short one, considerably shorter than in the loose state, and of course with a perforation down the centre, a greater surface of the charge is ignited by the first gas which is developed.

1495. The smaller the bore the greater the advantage you obtain, irrespectively of the actual length of the cartridge, from the charge being compressed?—Yes, within usual limits.

1496. With respect to the shooting qualities of the powder?—Yes.

1497. When compressed, is the powder united together by any mixture of any sort?—Merely by pressure. I suppose the Committee are aware that a number of trials have been made in other countries by various persons. Perforated and compressed cake powder was used in America in 1860, and is fully described in Rodman's "Experiments on Metals for Cannon and Cannon Powder," Boston, 1861, pp. 291–6. Several persons have also proposed compressed charges in this country; one was Mr. Browne, who in 1859 proposed a compressed powder. He mixed it with some kind of adhesive cement; there were, however, no perforations. We have specimens at Woolwich.

1498. For what reason did they mix anything with the powder?—Because they thought that the powder would crumble away and not compress properly.

1499. That I believe has not been found to be the case?—No, it compresses very well indeed.

1500. Does the chamber or perforation which runs up the centre of the cartridge keep its shape after the cartridges have been in use for some time?—I have had no experience upon that point, therefore I cannot say. The cartridges that we used were made up in the Royal Laboratory, and taken directly to the range and fired, but of course that would be a subject for experiment. You must submit the cartridges to a proper trial to see whether they will break up or not.

1501. Do you consider that the compression of the powder tends in any way to render it more liable to be injured by damp if placed in store?—No, certainly not, on the contrary I think you might waterproof the cartridges. I should think it would be easy to do so by a coating of collodion, or some waterproofing substance.

1502. Do you think that compressed powder could be used for paper cartridges?—Yes, I do not see why they should not be. Many cartridges with compressed powder have been made up in paper or in skin. For instance, Dr. Doramus, an American, made a number of compressed cartridges, and they were covered with skin. I do not think, however, that such cartridges would stand transport as well as metallic or "Boxer" cartridges.

1503. Did you see any of them?—Yes, we have specimens of them at Woolwich. They have no perforations in them.

1504. Are they made for breech-loading rifles?—No, they are intended for muzzle-loaders.

1505. Would there not be a probability in cartridges made for breech-loading rifles of the powder being broken and the chamber being filled up; or, in other words, do you think they would be strong enough to prevent the powder from filling up the perforation?—I think that that would be a disadvantage certainly, for instance, compressed powder cartridges, if subjected to rough treatment, would be liable to break up, if they got a fall, for instance, but that is a matter for experiment.

1506. Do metal cartridges made of compressed powder require to be stronger at the base than when loose powder is used?—I have had very little experience in the manufacture of cartridges for breech-loaders, and I cannot exactly say, but I do not see why they should. Colonel Boxer could doubtless give evidence on this point.

1507. I suppose that greater rapidity of ignition is obtained by using compressed powder?—I think so, if the charge be perforated, and particularly in a long charge. You perceive that in a charge, say of 85 grains, with a small-bore rifle, there is a considerable length of powder, and it is ignited at the very head. It takes a certain time for the gas which is first developed to travel through that cartridge; the only way in which it gets through is by penetrating by degrees through the interstices of the grains, and a certain amount of that charge merely acts as a wad; it is, in fact, blown out of the gun. A very long cartridge causes fouling, and you lose velocity by it. I believe it is just the same with rifled small arms as with rifled guns; for instance, the Whitworth gun may be taken to be a small-bore artillery gun in comparison with a gun throwing the same weight of shot with the service rifling. It has a very long cartridge, and in the Armstrong and Whitworth trials which took place in 1864, Whitworth vented his gun exactly in the rear through the cascable, and it was found when the vent was in that position, with an ordinary charge of loose powder, that the initial velocity was 100 feet per second less than in the Armstrong gun, which vented the charge so as to strike it in the centre; but Whitworth got over the difficulty by inserting a paper tube in his cartridge; he put a sort of feeder up the centre of his cartridge, consisting of quick match in a tube, and by that means ignited the cartridge in the centre; he thereby got his velocity up again and regained his 100 feet. It is much the same with these compressed charges which have a long perforation all through them; the gas which is first developed rushes immediately along this perforation and ignites all the surface; a great mass of the charge is thus ignited together, and that gives you more uniformity. In addition to which your cartridges are not liable to caking, which very often produces a wild shot with a low velocity from a long charge of loose powder. The chief cause of these irregularities, I believe, is that a part of the charge gets caked. You will often find in breaking up the cartridges, and especially in a long one, that part of the powder is caked. In compressed powder you have the whole thing caked.

1508. Do you think that you can ensure uniformity in the manufacture of compressed powder?—I can hardly say, but I should think you could; I do not see any difficulty in it.

1509. Do you think the probability is that you would ensure greater uniformity in the manufacture of compressed powder?—I should think so, certainly, and I should think it would be cheaper to manufacture.

1510. For what reason?—I think there would be no loss if you were to introduce compressed cartridges, as you would do away to a certain extent with the niceties of granulation and glazing in making the powder, and you would not have so much waste. In all these processes there is a good deal of waste and expense.

1511. Do you know what description of powder is best adapted for compressed cartridges for rifled breech-loaders?—I should rather be inclined to say powder that was not very highly glazed; I think it is better without so much glaze.

1512. Why do you think so?—Because I think it would compress better. I think that the glazing would interfere with its binding.

1513. Would it be at all necessary to glaze the powder that is used for compressed cartridges?—I do not think so.

1514. Because you could make them waterproof?—Yes, that might be done afterwards.

1515. There would be a saving of expense, would there not?—That again is a matter for experiment. I do not think you could make compressed cartridges—you might be able—actually out of meal powder. I think there might be a difficulty in it, because when you do make it into grains and compress it, if you examine a cartridge under a microscope you will see that there are a variety of little interstices running through the whole cartridge, so that the gas may still get in between and ignite it; but if you were to make it out of very fine meal powder you would do away with

all that. I think, therefore, that it would be better to make a compressed cartridge out of grain powder.

1516. Do you know whether compressed powder cartridges have been tried in France for rifled breech-loaders?—I do not. I know that experiments have been carried out in France with compressed powder cartridges made by Dr. Doramus, and we have got the correspondence down at Woolwich; but I think they chiefly had reference to large guns. They were given up I think afterwards.

1517. You have made, I believe, many experiments to ascertain the velocities of shots fired from rifled breech-loaders?—Yes.

1518. It would be in that way that you could test the comparative shooting qualities of compressed and loose powder?—Certainly, as far as regards strength and uniformity; it is the best way you can do it, and in fact the only way, for when once a shot has left the muzzle of a gun the powder has nothing more to say to it.

1519. I suppose it would make no difference in making experiments what description of rifling you had?—No; provided you fired them side by side; that is to say, you would fire the loose powder out of the same description of rifle as the compressed powder.

1520. Do you know whether there are any Snider rifles chambered for compressed powder cartridges?—I do not know that.

1521. Do you know whether there are any breech-loaders chambered for compressed powder cartridges?—I do not.

1522. (*Earl Spencer.*) You do not know of any reason why, if compressed powder succeeds with one kind of bore and rifling, it should not succeed with another?—No.

1523. Have you tried compressed powder during a frost?—No.

1524. Do you see no reason why it should fail during frost more than at other times?—No, it might, but it is a matter for trial; I do not see why it should.

1525. We have heard that the cause of the failure in former years of compressed powder was the want of an air chamber, or perforation?—I do not know about small arms, but it was so when we tried it first with the 12-pounder breech-loading field guns without any perforation in the cartridge, that is to say, the charge was compressed in a solid mass, and then we found it was very bad indeed; it caused a considerable decrease in velocity and was not at all uniform. Then we made the cartridges with a number of perforations running through the charge, and we got uniformity back again better than with loose powder, showing the value of the perforations. To obtain uniformity I have no doubt that the whole secret is in the perforation, and in using *grain* gunpowder.

1526. Is it quite clear that it decreases the fouling?—I cannot speak positively upon that point. I do not think there is a sufficient amount of evidence to show, but as far as we went we found that if you did not make the charge too hard, there was no increase in the fouling.

1527. Do you think that a sufficient number of experiments have been made as to the amount of pressure that is best for shooting?—No, I do not think there have been a sufficient number of experiments made. I should like, before I went into any large manufacture of it, to make some more experiments, but I think that a little over two tons on the square inch was what we found to be the best.

1528. You would, I presume, also make experiments with regard to fouling and accuracy of shooting, and also the effect on the cartridge case?—Yes, I would first have experiments made for velocity. I would fire the cartridges side by side to see whether I got uniform and equal velocities; there would be no use in going on if you found at first that you did not get uniformity in velocity. Then afterwards, when you had fixed the proper amount of pressure, and you got uniform velocities, you might try for fouling and accuracy in shooting. As long as you get uniform velocities you will naturally get accuracy in shooting, provided the rifle be a good one.

1529. You do not think that the experiments which have been as yet made are quite conclusive?—No, I do not think we have done enough in the way of experiment to rush into any large manufacture without further trial.

1530. Has not the compressed powder been used in the blank cartridges which have been issued lately?—I believe it has.

1531. Do you know with what result?—I do not not know.

1532. In that way we should get practical experience with regard to the effects of rough usage, and I suppose fouling also?—I do not know. I do not think you could judge from the fouling of a blank cartridge what it would be with a bullet in front.

1533. I suppose you might argue that if you had less fouling with a blank cartridge made of compressed powder, you would also have less fouling if there was a bullet in front of it?—Yes, I think you might.

1534. (*Mr. Ross.*) 147 grains of powder seem a very large charge to use for testing the velocity?—They were proof cartridges, they were made for proving the gun.

1535. With so large a charge of powder as that there is a probability of a considerable quantity of it being driven out of the gun unexploded?—So there was probably.

1536. A smaller charge, say, of 70 grains, would be a better one with which to draw a comparison?—Yes, decidedly.

1537. (*Captain Mackinnon.*) Your opinion is that a perforation in compressed powder cartridges will cause complete and rapid combustion of the charge?—Yes, more complete and more rapid than with loose powder in long cartridges.

1538. And this, in your opinion, will tend to diminish fouling?—Yes.

1539. And it would also cause more uniformity?—It would.

1540. And it would give a higher initial velocity?—Yes, provided the powders were both the same, that is to say, if you take the same lot of powder and compress a portion of it, and put it into a cartridge and fire the same powder in a loose state, then I think the perforated and compressed charge will give you a higher initial velocity. It depends, however, on the amount of pressure applied.

1541. (*Captain Rawlins.*) Could you use powder of an inferior description for making compressed charges, or would you recommend that powder as good as the loose powder at present made should be used?—I should like to know what is meant by an inferior description of powder.

1542. The powder in the present day is very carefully manufactured, and goes through many processes to make it serviceable. Would it be necessary, do you think, to use that kind of powder?—No, I do not think so; for instance, I think you might use the ordinary fine grain powder.

1543. Would that be cheaper?—I think so.

1544. Have you seen any compressed powder cartridges without perforations in them fired?—Yes. I saw a rifle tried the other day, the Martini rifle. It fired I believe the compressed cartridge, and I found that it gave greater uniformity than any of the others in velocities.

1545. (*Mr. Ross.*) When did you try the Martini rifle?—The other day at Woolwich.

1546. (*Chairman.*) You have made experiments with the Martini rifle?—Yes, among all the others. I fired five rounds from each the other day.

1547. The Committee have found in making their experiments with that gun, that in consequence of the cartridges being badly made, there was a great escape of gas at the breech, and that, I should have supposed, would have interfered with the uniformity of the shooting?—There might have been a constant escape, but the velocity was uniform, although it was not quite so high as might have been expected. Five

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rounds, however, are too small a number to judge from.

1548. Was it more uniform than with other guns?—Yes, as to velocity, but I take the velocity, say in the first 50 yards that a bullet has travelled, it may, although giving very fair velocity up to 50 yards, shoot very badly afterwards, after going 500 yards.

1549. In making comparative experiments with compressed powder and cartridges made up of loose powder, you would I suppose use the best description of powder for compressing and the best description of loose powder?—Yes.

1550. It does not follow, as a matter of course, that the best powder in a loose state is the best for compressing?—No; but in comparing the two, suppose you find that upon the whole the advantages are in favor of one powder for compressing, if you fire that powder in comparison with another powder for velocity, you must not imagine then that the compressed powder will give you—because it may or may not give you—the same velocity. There is the previous manufacture of those two powders to be taken into account, which may influence the result—they may be of different densities.

1551. Have you yet ascertained which is the best powder for compressed cartridges?—No; in our artillery experiments we have used Rifle L.G. powder, and in the small-arms experiments, I think, as well as I can remember, it was fine grain powder that was used—"J_3" powder.

1552. (*Mr. Ross.*) Have you tried any experiments at all for accuracy?—No, we never have, not with small arms; at least, not that I can remember. Of course I am alluding to perforated and compressed powder. Experiments were made for accuracy in 1860 with Mr. Browne's compressed powder without perforations. The shooting was very indifferent.

1553. (*Earl Spencer.*) Does compressed powder exert a different force on the bullet than loose powder?—I think probably that it does, the action of the perforated and compressed charge in some cartridges being more sudden.

1554. (*Chairman*). Therefore you could probably get expansion more easily in a solid bullet by using compressed powder?—I think so. I think it would "up-set" it better.

1555. The use of compressed powder might in fact affect the question of bullets with a cavity at the base and solid bullets?—It might.

1556. It would very likely make a solid bullet a better shooting bullet than one with a cavity at the base?—Yes, so far as up-setting it better than loose powder. All these questions are, however, proper subjects for experiment.

The witness withdrew.

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Field-Marshal H.R.H. the DUKE OF CAMBRIDGE, K.G., G.C.B., examined

1557. (*Chairman.*) Will your Royal Highness be good enough to state what you consider to be the requisites for a military arm, chiefly with regard to the necessity for a low trajectory and accuracy at long ranges?—Of course there can be no doubt of the advantages of those two points, which are very great, but at the same time you must bear in mind that the stronger the arm and the less complicated it is, the better it is for the soldier.

1558. If it were necessary, in order to ensure a low trajectory, to reduce the bore of the rifle, is there any military objection to a reduction of the bore?—I do not know that there would be any objection to a reduction of the bore; but I think it is a very grave question for consideration, whether the advantage you would gain by a low trajectory and improved shooting would not be counterbalanced by the expenditure you would have to incur if you altered all the arms in the country, and which you must do if you substituted a smaller bore for the one we have now.

1559. The Committee have been informed that it will be necessary in the course probably of the next autumn to provide the troops with new arms, and it would seem that if new arms are to be supplied it is desirable to have as perfect a one as possible?—That is a very grave and very difficult question. There is great force in the way in which you put the question, but I wish the Committee to understand this, that a change of that sort, if it is to affect the entire army distributed all over the world, will take a very long time to carry out, and it must be attended with the greatest inconvenience; for instance, take the question of ammunition in a time of war—nobody knows better than you do that a variety of bore or calibre for the infantry soldier is one of the most objectionable things you can have; it is so easy to make a mistake, and so difficult to correct it—and when men are supplied with a variety of ammunition for different arms. If you change the whole armament of the country it will be necessary to have two descriptions of projectiles for a very considerable period, not only at home but in India, where the present arm is now gradually being introduced by successive regiments as they go out, and also in the various colonies. The inconvenience resulting from such a change would be so great, that unless you are sure to gain largely by the arm you intend to substitute for the one in possession, I think it is better, if possible, to retain the arm in possession. Provided always, that you are satisfied you have got as good and probably a better weapon than any other army possesses that you are likely to meet.

1560. (*Earl Spencer.*) Besides a low trajectory, which you would no doubt consider an important thing, there would be other considerations, such as wear and tear of the barrel in a military arm?—No doubt, I quite admit that.

1561. (*Chairman.*) I will lay before you, sir, a comparative statement as to the height of the trajectory from the small bore ·451, and from the 5-groove rifle at present in the service?—There is no doubt that the small-bore has great advantages with respect to that specific point, and the question for the Committee to consider, in my opinion, is, whether the advantage to be gained by this will be so great relatively to the disadvantage which will be inevitable from an entire change of the arm, that the country ought to be called upon to make the change.

1562. (*Earl Spencer.*) It would be a change very similar to that which is now going on as to muzzle-loaders and breech-loaders?—Yes, but that we could not avoid. We were obliged to make some change, because every other army in Europe adopted the breech-loader—it was inevitable,—and, moreover, you were able to make that conversion very rapidly with the arms in possession, which you could not have done if you had taken a new arm from the first. At the present time, I believe, we have arms for all, or nearly all, the infantry in Europe. We have arms both at home and in India, and a reserve besides, and therefore to that extent we are now ready to take the field in Europe with ammunition and arms of one calibre.

1563. How long did it take to effect the change required from the muzzle-loader to the breech-loader for the force you have mentioned?—The whole change has been made in a year and a half up to the present time.

1564. (*Chairman.*) And I presume that any other change might be as quickly made?—No; because the time required for the conversion of an arm is very slight, as compared with the time that would be consumed in making an entirely new arm. That would take much longer and be much more expensive.

1565. It was stated in evidence by Colonel Manly Dixon that of nine competitive arms, the most expensive and the one which would necessitate the greatest change in the machinery would not lead to an expenditure of more than 6,000*l.* to alter the machinery?—As far as that goes, that is a very small amount, but

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then comes the military question which I have already pointed out, the great inconvenience that would arise from having a double set of arms and a double set of ammunition—and the ammunition is the special point—for a very considerable period, which of course could be calculated; and it would depend upon how rapidly a new arm to be substituted for the present arm could be introduced, both in a financial and in a manufacturing point of view; that is to say, how long they would be at Enfield and other establishments in supplying new arms of the description intended, and how great would be the cost, which of course would be spread over a certain number of years, and during the whole of which period we should have, as I have said, a double set of arms and a double set of ammunition.

1566. Supposing that all other objections were put aside, and that the shooting was equally good from a shorter rifle than the present one, is there any objection to a shorter rifle being used?—The present rifle has been shortened lately several inches; I mean the old Enfield rifle has been shortened several inches, and I do not think that the soldier ought to have a shorter arm than that is. You must have a certain length for the arme-blanche; you must put on a sword or a sword-bayonet, which has its disadvantages for an ordinary regiment of the line; it does not affect a rifle corps; but we consider that the arme-blanche is most important, and a matter for much consideration.

1567. Will not the advantage be very much on the side of the firearms now that men can load so quickly as to be able to fire 12 shots a minute, so that it will hardly ever occur that two lines opposed to each other will close with the bayonet?—I should think it would be much less so than formerly, but still I am of opinion that you must always keep the army relatively to other nations in a position to do what it may be called upon to do. I have a paper here containing some remarks of the late Duke of Wellington. They do not seem to apply so much to the arm at present in use, but refer rather to the state of things when a smooth-bore gun was used at very short ranges, and when the object seemed to be to get a very crushing smooth-bore arm compared with one which would have much less effect. In those days it was considered that a ball discharged from a large bore had a more crushing effect than when fired from the smaller arm that was then in use by the French and other continental armies. It does not seem to apply to the arms of the present day; the circumstances are entirely different. The projectile which in fact is now universally fired from a rifle cannot be put on a footing with the bullet fired from a smooth-bore gun at very short ranges, and which has very much less crushing effect than the smallest projectile fired from a rifled gun.

1568. An erroneous idea seems to be entertained by some persons that because a bullet is fired from a small bore corresponding with that cartridge (*producing the same*) it will only make a hole of that size, whereas when it strikes it turns round and will force its way laterally?—That is to say it flattens.

1569. Yes, and it turns round?—It has no doubt great crushing power.

1570. (*Earl Spencer.*) I suppose, sir, you attribute considerable importance to penetration in the use of a military arm?—Yes, that is a very important point.

1571. It is probable, I think, that penetration and crushing effect are sometimes confounded, and what is wanted is a bullet that will stop a horse or a man, and not go merely through him and wound him very slightly?—Yes. The opinion of the Duke of Wellington had especial reference to animals, and the effect of a ball fired from a larger bore on the bones of animals, which of course would be much greater from a rifle than from a smooth-bore.

1572. Your Royal Highness is aware that a heavy charge of powder and a light bullet have very much the effect of making a large wound?—Yes; but my observations really have much more reference to the military question, to the double ammunition, and the time that it must take to make a complete change in the armament.

1573. You would probably not see any objection to two sorts of ammunition that would be interchangeable; for instance, a heavy charge of powder and a light bullet for the men generally, which would give a very low trajectory up to 500 yards, and a heavier bullet with perhaps a lighter charge of powder, that would give great accuracy at longer ranges?—I should not object to that at all. I object to nothing which is interchangeable; that is to say, supposing there was a mistake made, that the arm could still be used.

1574. But you would object to different bores?—Yes, I should, and for this reason: take the Snider and take the Chassepôt, of course the ammunition for the Chassepôt could not be made to fit the bore of the Snider, neither would the ammunition of the Snider fit the bore of the Chassepôt. The present arrangement is that the same bore is adapted for our carbines and our rifles, and the carbines both for cavalry and artillery, so that the same bore will do for cavalry, infantry, and artillery, and the same ammunition.

1575. (*Chairman.*) Evidence has been given before the Committee as to the use of explosive shells in India. Do you think that they would be applicable for general service?—I should think so, and be valuable too.

1576. Would they not have a very great moral effect upon the troops against whom they were used?—No doubt.

1577. It appears from the evidence we have received that the ammunition made up in the form of shells is exactly similar in all its shooting qualities to the ammunition made up in the ordinary way?—Just so.

1578. (*Earl Spencer.*) Has your Royal Highness seen the reports made on the Whitworth rifle muzzle loaders which were issued to the troops, and if so, will you be good enough to state whether they were upon the whole favourable or otherwise?—I think they were favourable, but I have not gone so minutely into that matter as to be able to give a very decided opinion one way or the other.

1579. With regard to the two kinds of cartridges, the metallic cartridge and the paper cartridge, has your Royal Highness formed any decided opinion in favour of one or the other?—I could not give any decided opinion upon that.

1580. Would it be of great practical importance that soldiers should be able to make up their own ammunition?—Yes, of immense importance, if it could be done, for they might be frequently in a position in which it would be most important to do so, when if they could not they would be in great straits and difficulties.

1581. Practically, is ammunition often made up by soldiers?—Yes, constantly.

1582. There would be some difficulty, I suppose, with the present Snider ammunition?—No doubt, and there would generally be with all breech-loading ammunition. If it could be done, there would no doubt be great advantage in it.

1583. There might possibly be other disadvantages to counterbalance it, such as the effects of wear and tear, rough usage, exposure to damp, and things of that sort?—Certainly there would be.

1584. (*Chairman.*) Most of the paper cartridges that the Committee have seen might be very well carried packed in a pouch, but they could not be safely crammed into the men's trowsers pockets?—Quite so, and that is a great disadvantage. There is no question about this, that the usage of arms by the soldier, do what you will, is always very much rougher than anybody can imagine, more particularly on board ship. There they get knocked about much more than people would suppose.

1585. (*Earl Spencer.*) Would not a stronger barrel than the one at present in use be of some advantage?—Yes; the barrel of the present arm is somewhat weak.

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1586. Has your Royal Highness formed any decided opinion as to the particular form of a bullet, whether it should have a solid head, or a hollow head like the present one?—I think that that is a mere matter for experiment in shooting; it depends entirely upon the results of the practice. Whichever bullet produced the best results in practice would be the one I should prefer.

1587. (*Chairman.*) The bullet with a hollow head at present used in the service would make a much worse wound than a solid bullet, but it fails in penetration; for example, it would not penetrate a fascine or a gabion?—Then it would be very objectionable. I should consider that a great defect.

1588. It is important, I presume, that a bullet should penetrate fascines, gabions, and mantlets?—Yes; what I meant was, that any bullet that would meet the requirements of the service, be it one or the other, would be equally acceptable in a military point of view; and of course the one which would be wanted would be that which, on experiment, practice, and trial, produced the military results most required, and amongst those certainly penetration is one of the first.

War Office, Tuesday, 3rd March 1868.

PRESENT:

LIEUT.-COLONEL FLETCHER IN THE CHAIR.

CAPTAIN RAWLINS.
CAPTAIN MACKINNON.
EARL SPENCER, K.G.
CAPTAIN HAIG, Secretary.

F. A. Abel, Esq.

3 March 1868.

FREDERICK AUGUSTUS ABEL, Esq., examined.

1589. (*Chairman.*) Will you state to the Committee what position you hold?—I hold the position of Chemist to the War Department, my head quarters being at the Royal Arsenal.

1590. Have you made many experiments with regard to the best lubrication to be used for rifle cartridges?—I have; the subject has received a good deal of attention on my part for some years past, indeed ever since 1856, when the question as to an improvement in the lubrication was first raised. A committee was appointed in 1857 to report upon the proposal made by Colonel Boxer at that time to substitute pure beeswax for a mixture of beeswax and tallow as a lubrication for small arms. A great number of experiments were in consequence made, not only by the committee, but by myself individually, to ascertain, in the first instance, whether beeswax would act as efficiently, as a lubricant, as any mixture of beeswax with a softer material; and, secondly, whether certain defects which were inherent in other lubricants would be remedied by the use of beeswax alone. The result of those experiments proved incontestably that beeswax acted efficiently as a lubricant, and indeed more so than mixtures of various substances, either with or without beeswax; it possessed a lubricating property which acted differently from those of other substances, and it had the great advantage of perfect permanence in its properties and perfect stability; that is to say, the influences of heat, or atmospheric influences generally, the influences of moisture, and the effects of time, produced little or no change in the beeswax, if at the beginning a material of the best quality was employed.

1591. You have stated that the committee sat in 1857?—Yes.

1592. Therefore the lubrication which they had to consider was with reference to muzzle-loading rifles?—Yes, it referred to the converted Enfield rifles.

1593. With regard to the lubricating properties of beeswax, do you consider that they are better than would be obtained by any mixture with any softer material?—I consider that they are, because the beeswax acts quite differently as a lubricant from any fatty materials. The action of the wax in the barrel is similar to a burnishing action, and as the wax is carried along the surface of the barrel it glazes it; it does not merely smear it over with some soft matter, which might partly prevent the adhesion of fouling, as when a fat is employed, but it glazes the barrel so perfectly that it produces a surface to which any fouling material or leading has very little if any tendency to adhere. Therefore I consider that it has a more perfect action as a lubrication, although it is a very different action to that possessed by any other lubricant.

1594. Do you think that the same observation would apply in all climates?—Yes, pretty equally in all climates, but, naturally, in the first round or two in cold climates it will always be somewhat deficient in its action, because first of all the barrel is very cold, and the wax is hard, and therefore it would have a tendency to be brittle in very cold climates, but that would soon correct itself.

1595. Would not the wax act better in hot climates than in cold?—No; I think that in very hot climates it would not act as well as in very cold climates, that is to say, the heat of the barrel would be proportionately so much greater, consequently there would be so much less deposit of wax upon the barrel, and the fouling would be drier in hot climates than in cold.

1596. Have you tried oil as a lubricant?—Not purely oil, and for the obvious reason that it is extremely difficult of application, unless you had some complete metallic envelope, something like, on a small scale, the metal case used for holding the mixture of oil and tallow which is employed for the Armstrong guns. I think, unless you had some arrangement of that description, you could not use a liquid, or anything approaching it, but I have tried oils in small quantities in admixture both with beeswax and with fats of different kinds.

1597. With regard to the lubricating quality of the wax, does it not depend in a great measure upon the proportion in which it is put on the bullet, that is to say, if too much is put on the bullet it would have an injurious effect?—It might so, but in the case of muzzle-loading small arms that difficulty was counteracted by the fact that any excess of beeswax is removed during the entering of the bullet, which would not be the case in breech-loading arms. An excess of lubricant would act prejudicially, whether it were beeswax or any other.

1598. Are you acquainted with Price's composition?—Yes; it was first of all communicated to me in confidence, when it was proposed as a material for a lubricant for the Westley Richards' arms; my opinion was not asked upon it at that time, and it was adopted without any question as to its quality. Mr. Westley Richards said that it was necessary to use it, and it was used. I was subsequently asked for a report on the

material, especially with reference to its powers of resisting climatic influences, and its effect upon the metal, and my examination of it showed that undoubtedly the material is no better, but perhaps worse, than many other lubricating mixtures with which I was acquainted.

1599. In what respect does it fail?—It gradually changes and hardens, it contains a quantity of castor oil and palm oil, which in the course of time exude or separate from the material; it also contains resin and lead soap, both of which are hard substances and not possessed of great lubricating properties; these are gradually developed in their purer condition by the absorption of the oils into the paper, and so the lubrication must become depreciated in course of time.

1600. What effect has tallow or a lubrication like tallow upon the bullet?—The action of any fatty material upon the bullet is to promote a gradual oxidation, and to produce upon the bullet a crust, which in fact is white lead, or rather a mixture of white lead with the fatty acid that is produced from the fat which is used. The reason of this is, that all these fats, although you may use them in a perfectly pure condition at first, undergo a change by exposure to air, and especially in thin films, which results in a development of acid. Then this acid matter establishes a corrosive action on the lead, and eventually the lubrication may be entirely destroyed and converted into a hard material containing lead in its composition. On the one hand the bullet is corroded, and on the other hand the lubrication is destroyed.

1601. Corrosion I suppose would take place more in some climates than in others?—Yes, it would take place more rapidly in warm damp climates than in dry climates.

1602. In India, for instance, how soon do you think it would have a deteriorating effect on the bullet?—It is very difficult to fix the precise period, but in 1857 I examined some ammunition which had been returned after, comparatively speaking, a very short time; and in that instance the corrosion had proceeded to a very considerable extent, although the lubrication at that time consisted of only one part of tallow mixed with five parts of beeswax.

1603. (*Earl Spencer.*) Have you made any experiments with bullets composed partly of tin?—I have not tried any firing experiments with them, but the question was referred to me when, as I understood, Mr. Lancaster proposed to use an admixture of tin and lead for the purpose of hardening the bullets. The effect no doubt would be that of hardening the bullet, and if that were a result beneficial to firing it would be produced in that way. Hitherto the object of all our aims has been to obtain lead as soft as possible. Lead is selected and inspected with extreme care, especially with reference to its softness, so that it contains no metal such as tin, or arsenic, or antimony, that would impart anything like hardness to it.

1604. Do you think that a mixture of tin with lead would prevent the corrosion you have spoken of?—I do not think it would have any important effect in preventing it, it might slightly retard it, but unless the proportion of tin were considerable it would not be likely to have a very useful effect in that direction.

1605. Have you seen the metallic wad that Mr. Whitworth uses in his cartridges?—I have not seen any of the recent wads, but I think I have some idea as to the general construction of the wad you speak of.

1606. Could you apply oil if that form of wad was used as a lubricant?—I do not think that in any instance you could use oil with confidence in an arrangement of that kind unless the oil were to be perfectly enclosed, so as to be perfectly sure that it would not gradually exude and be absorbed by the wrappers or portions of the cartridge which would convey it to the metal. A freshly prepared wad of that kind no doubt acts very efficiently, but I doubt whether it would prove to be so in the long run.

1607. You could not use pure beeswax with that form of wad?—Not readily.

1608. Do you believe it would act as efficiently as a lubricator, putting aside the question of keeping, as when the bullet is covered with a lubricant?—I am hardly prepared to give an opinion upon that; the position of the lubricant is different, and that may make a very considerable difference in the shooting. The true principle seems to be to have the lubrication around the bullet, that is to say, upon that portion of the arrangement which comes into closest contact with the barrel.

1609. The object of the lubrication being to prevent leading and fouling from the powder?—Yes, the fouling from the powder being I believe in very many instances set up by the very slightest tendency to leading in the first instance.

1610. I suppose it would be not easy to say which is the most difficult thing to prevent, the fouling from the powder or the fouling from the lead?—It would be very difficult to say.

1611. (*Captain Rawlins.*) I suppose there would be no difficulty in getting the best beeswax?—None whatever.

1612. Do you think that the lubrication would be more liable to deteriorate when put on in cannelures or on paper?—In the case of beeswax it would hardly make any difference; the alteration which the beeswax undergoes is so very slight that, after the experience of many years of its application on paper, it has not been found to undergo any change. If anything, it would be more protected in the cannelures, because it would not be spread over so large a surface.

1613. Would the use of any other lubricant than beeswax on the paper, not in immediate contact with the bullet, be objectionable?—It would be in this way, that however carefully a soft lubricator may be applied, containing any fatty matter in the first instance, the tendency of the paper is gradually to draw the latter forward towards the bullet. In the case of that apparently hard mixture which has been referred to as Price's mixture, the lubricant was applied very carefully to a given length of the cartridge, but after exposure for about a week to a temperature not exceeding 80° F. during the day, and 60° F. during the night, the fatty portions had been gradually drawn into the paper towards the bullet, and absorbed by the wrappers.

1614. Then it was in contact?—Then of course the oils were brought into contact with the metal, and the lubricant was no longer in its original condition.

1615. (*Chairman.*) Referring to what you stated about soft lead being chosen for bullets, will you be kind enough to explain why that is preferred?—I should imagine the reasons to be two. One reason, and no doubt a very important one, is that of facility of manufacture. As the bullets have to be manufactured by pressure, a slight difference in hardness makes a great difference in the working of the machines and the duration of the dies. Secondly, also, as long as the bullet is hard enough to resist anything like mechanical injury from rough usage, the softer the metal the more likely is it to act efficiently in expanding into the grooves of the rifle.

1616. Do you think it is possible that the lubrication which is placed on the bullet should, when the rifle is fired, extend to the end of the barrel, or that it would be completely absorbed in the first half or two-thirds of the barrel?—I should consider it hardly likely to take place with such an amount of lubrication as I know now is used in the breech-loading rifles; it might with a very small quantity, but it would not be of very long duration, that is to say, if the firing was kept up with moderate rapidity, the lubrication, however small in quantity, would gradually be carried on towards the end of the barrel, because the quantity deposited upon the surface is very small indeed, it is a mere glazing upon the surface of the barrel.

1617. (*Earl Spencer.*) With bullets lubricated partly with tallow do you think it is possible that that would take place?—I do not think it would make any considerable difference.

1618. I suppose the effect of corroded bullets would be that it would be almost impossible to load, and it

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would deteriorate the ammunition very materially in store?—There would be a difficulty in loading, undoubtedly; but, especially with bullets that were made with such accuracy as the bullets now made for breech-loading arms, there would also be a difference in the form of the bullet resulting from the corrosion, which might considerably affect the shooting.

1619. (*Captain Mackinnon.*) Would bullets made of very soft lead be more likely to cause lead fouling than bullets that had been slightly hardened?—There might be a slight tendency in that direction.

1620. (*Captain Rawlins.*) Would very soft lead injure the dies more than lead which was slightly hardened?—No; the softer the metal the better for working purposes.

1621. (*Chairman.*) Have you made any experiments with compressed powder for small arms?—Not specially for small arms, but the subject generally has received my attention for some years past, as a member of the committee on gunpowder, which has been recently dissolved. I believe that the production of compressed powder in the form of small pellets with perforations emanated with that committee, that is to say, with one of its members, Colonel Boxer, who proposed, in 1861, a trial of that particular form of compressed powder as a material for cannon cartridges.

1622. Will you be good enough to state generally the advantages, and, if any, the disadvantages of compressed powder?—I should consider that compressed powder (that is, speaking now of powder either converted directly from meal powder to compressed powder, or powder similarly converted from grains into a compressed form), would have several advantages; thus, for example, the powder in the first instance would have less tendency to change in the course of time by travelling, or from atmospheric causes. If gunpowder is converted into compact masses it has no tendency to break up, or little tendency to dust, and less tendency to absorb moisture. Under certain conditions, that is, applied in a proper way, undoubtedly compressed powder affords a better means of ensuring the perfect action of the powder upon a projectile, that is to say, you may more readily establish different degrees of rapidity at the first inflammation of the charge by compressing it; you may utilise the consolidation of the charge as a means of presenting definite surfaces for the first inflammation of the cartridge, as by the perforation, for example, which has been adopted by Colonel Boxer in his cartridge lately. You there present a certain definite surface of the cartridge to rapid inflammation; you ignite the charge more uniformly, and you are more likely to establish perfect action than by using the grain powder.

1623. Supposing that a large number of such cartridges were made, do you think you would get uniform action throughout the whole?—You would if you were careful as to the selection of the powder you used. The cartridge would probably be more delicate in its action with compressed powder, and it would be more necessary to select with great care the powder with special reference to uniformity; but, supposing that to be secured, I believe that the uniformity of firing would be greater with compressed powder than with ordinary powder.

1624. Do you think there would be a difficulty in the manufacture of cartridges for small arms with compressed powder?—I should say none at all.

1625. Would there be no difficulty in getting equal compression throughout the cartridge?—There is a little difficulty in that direction, but that would be uniform in all the cartridges. Some experiments which I have recently made have shown that the small perforated pellets which have been prepared for cannon-charges have slightly different densities in different parts, and that difference in density influences decidedly the degrees of rapidity with which the different parts of the charge inflame, but that would be uniform in all the cartridges, given a proper machine by which to manufacture them. Therefore if you once establish that a cartridge has given good results, whether it be uniform throughout or not, is a matter of minor importance, as you would obtain the same result in all instances.

1626. With regard to the comparative strength of compressed powder and ordinary powder, have you formed any opinion?—It is very difficult to give a decided opinion upon that without making a very considerable number of experiments, which I think have not yet been sufficiently extended, that is to say, comparative experiments as to velocity, precision, and fouling in the arms. I think, with regard to small arms, the subject has hardly been sufficiently developed to warrant a decided opinion upon this point.

1627. Have you made any experiments, apart from firing, as to the strength of compressed powder, and its liability to foul or not?—No, not apart from firing; those are the only experiments by which that point could be satisfactorily settled.

1628. Have you any data upon which you can form an opinion as to whether compressed powder is more or less liable to foul than other powder?—I have no absolute data, but speaking simply from my knowledge as to the action of powder when used in different forms in arms, I should say that, if anything, the tendency with compressed powder is to foul less, because you establish a more perfect burning of the powder, and I should also imagine that, in consequence of this, the strength of the powder would be greater than in the granulated form.

1629. Have you formed any opinion as to other materials besides powder, and as to their capability of being used for small arms?—I have turned a good deal of my attention to this subject, especially with reference to the application of guncotton, which, if any material be likely to become an efficient substitute for powder, is, I think, the one to be looked to. I have been carrying on preliminary experiments on the construction of a gun-cotton cartridge for the Snider breech-loading arms, and although the progress made is slow, partly from unavoidable circumstances, and partly from the great delicacy and nicety with which this explosive material acts, as compared with a comparatively crude substance like powder, I still consider there is a promise of our being able to use gun-cotton as the explosive agent for breech-loading arms.

1630. If gun-cotton could be used, there would be no fouling?—None.

1631. Have you formed any opinion as to what description of powder is the best to compress for rifle cartridges?—No, that is entirely a question of experiment. I have not actually gone into the question of the manufacture of compressed powder for small arms.

1632. (*Earl Spencer.*) You have stated that it would be very necessary to make a careful selection of the powder in making up compressed powder cartridges, in order to get uniformity of shooting, but I suppose that the same care is necessary now?—Yes, probably it might be found that somewhat greater care still might be necessary, but it would present no difficulty at all.

1633. I suppose that the action of the bullet would be somewhat different?—I believe it would be, but it is very difficult to speculate upon that; I believe that the action upon the bullet at first would be more rapid, the ignition of the charge extending over a greater surface within a given period, and the first expansion of the bullet would therefore be more perfect with a compressed charge than with a charge of granulated powder.

1634. I suppose there would be some difficulty in carrying on experiments with compressed powder, if you wanted to diminish or increase the charges without having to send the cartridges back to be pressed again?—There certainly would; it would be necessary in that case to prepare charges beforehand of different lengths and weights.

1635. You could not easily diminish the charge?—Not accurately, and not without a tendency to break up the charge and introduce inaccuracies.

1636. The Austrians I believe tried many experi-

ments with guncotton which were not successful?—Yes, they tried a great many experiments some years ago, but the committee which was appointed to investigate the guncotton question examined those experiments carefully, and the conclusion arrived at was that the subject had not been attacked in the right direction, and that it was not surprising that no permanently good result was attained.

1637. The experiments on guncotton are not so far advanced at the present moment that you would recommend the Committee to hold their hand as to that?—Certainly not.

1638. Would you make the same remark as to compressed powder?—I think that the question of the value of compressed powder could be settled within a very short period. I fancy that the data which already exist have shown precisely the right direction in which to make experiments, and I think that a short course of experiments would establish either one way or the other the advisability or not of using compressed powder.

1639. Do you think that there would be any difficulty in getting it made, supposing that you were obliged to go beyond the arsenal?—No, it is merely a question of an alteration of machinery for the manufacture of charges in that form instead of in the ordinary form.

1640. (*Captain Mackinnon.*) Could not the pellets be waterproofed with collodion?—No; I do not think that any arrangement for applying waterproofing material actually to the surface of the powder would be found permanently efficient. The use of collodion was proposed by the person who first developed the idea of compressing the powder, by bringing the grains into very close contact. Dr. Doremus, an American, proposed the use of compressed powder for cannon, and he suggested that the powder should be coated with a film of collodion. He had the idea that a coating of collodion produced additional compression of the powder, but that was perfectly erroneous. There is no question that a thin coating or film would be liable to mechanical injury, and it would not be durable for a sufficient length of time to rely upon it with confidence.

1641. Do not compressed powder pellets give a much more sudden and severe blow than loose powder?—Yes, at first.

1642. Then a bullet made of soft lead would be differently acted upon by compressed powder than by loose powder?—I should say so, to some extent.

1643. Probably that would make it necessary to give the bullet a different shape?—It might, but it is very difficult to say; it might show possibly a slight difference in favor of a somewhat hardened metal.

1644. (*Captain Rawlins.*) Is there tendency to caking in the present service cartridge powder?—Only a very slight tendency. The present service cartridge for breech-loading arms is so thoroughly waterproofed that even when exposed to very severe tests in the way of keeping in a humid atmosphere, it exhibits very little if any tendency to cake. I have some cartridges which have been for three months kept in an atmosphere saturated with moisture, and I have reported upon them, I believe, once or twice to this Committee. I have recently examined some of those cartridges and the powder is to all intents and purposes unchanged. There is hardly any tendency to cake in the slightest degree.

1645. There would be none, of course, in compressed powder?—No, because it would already be in one solid mass.

1646. Would the compressed powder be applicable for paper cartridges?—I should think so. I do not see that there would be any great difficulty in applying it to paper cartridges.

1647. Would the sides of the perforation which runs up the centre be liable to crumble in and fill it up?—No, not if properly manufactured, with such an amount of pressure as would be necessary to consolidate the powder properly.

1648. I am speaking of paper cartridges?—I do not think it would affect the stability of the charge. What I have said is generally with reference to the tendency of the powder to break up.

1649. Might not a cheaper powder be used which was perhaps not quite so highly worked up?—The finishing processes might not have to be applied to the same extent to powder of that kind. On the other hand, the process of conversion into a condensed form might be a little more expensive than the old method of making cartridges, therefore, probably these differences might counterbalance each other in the course of time.

1650. In a case of emergency, supposing that soldiers had fired away all their ammunition, do you think that some machine might be carried with a regiment, a press, or something of that kind, to enable them to refill the cases if they had the loose powder?—I do not think that that could be efficiently done.

1651. You do not think that a sufficient quantity of powder could be pressed into a case?—No, I think not; certainly not with sufficient uniformity.

1652. (*Chairman.*) How is the waterproofing of the present service cartridge secured?—The metal coil is closed with india-rubber cement at the overlapping, and the entire case is covered with a paper coating attached to the metal by means of varnish, which thoroughly waterproofs the paper. The case is firmly choked round the bullet, and some beeswax is applied there as a cement.

1653. The cartridge itself is almost waterproofed without the paper, is it not?—Yes, but there is a very slight tendency to the creeping in of moisture if the paper is not superposed, or unless some cement is applied to the place where the coil ceases.

1654. As in Daw's cartridge?—That is soldered, I believe. I consider that the other offers greater certainty and security, from the fact of its consisting of a coil, cemented where the overlapping ends, and coated with waterproof paper. The perfection of soldering depends entirely upon skilful workmanship; you may have here and there a little pin hole which may considerably affect the tendency of the cartridge to absorb moisture, but if you have a double case of metal and varnished paper, if there were any defect of that description in the metal, it would be closed up by the waterproof paper.

1655. Have you any idea as to how compressed powder would affect hardened bullets?—No, I have not; in fact, one could not give an opinion upon that except after actual trial.

1656. (*Earl Spencer.*) It was stated by one witness who had seen some former trials made with compressed powder that it was affected by frost. Do you think that is likely?—I do not see how frost is likely to affect it more than it would affect the ordinary shooting. In very severe cold, if exposed to it, there might be a little tendency of the pellets to crack, but I should think it would be an extremely rare occurrence indeed.

1657. (*Chairman.*) Have you formed any opinion as to what state of the atmosphere causes powder to foul?—I can hardly give an opinion upon that; it is a point upon which a man who is constantly firing under all circumstances would be more capable of giving a decided opinion. From my own observation, however, I should say that a hot dry day is the day on which of all others the greatest amount of fouling would be produced.

1658. (*Earl Spencer.*) Some evidence has been given with regard to detonating powder, and it has been stated that it is very difficult to get uniform qualities, that some of it is very much more sensitive than others?—I think it should not be the case with a proper system of manufacture. The detonating material which is used in the caps is capable of quite as uniform manufacture as gunpowder, there should be no variation in it.

1659. Do you believe that it is so in practice?—I think that its uniformity of action would rather depend upon the manner in which it is placed in the cap, and upon the uniformity of its compression in the cap. It may make a very considerable difference if the powder is less compact in the cap in one case than

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in another, and the strength of the flame produced from it will be very different.

1660. That is to say, it would require in one case a lighter blow to explode it?—Yes, a lighter blow in one instance than in the other. The more tightly the material is pressed the smaller the blow required to explode it, and the stronger the flash will be.

1661. Lately I believe that some alterations have been made in the anvils in consequence of the difference that has been found?—I believe so, but I am not acquainted with the details of the alterations.

1662. Would you believe it possible that a cap could be exploded without the piston actually entering the chamber, by a blow from the outside?—Not unless there was some support on the other side to where the blow is applied.

1663. You have probably seen the bolt principle which is used in breech-loaders?—Yes, I have seen it.

1664. Do you think it possible for the bolt, without the piston protruding, to strike against the base of the cartridge and explode it?—I think not, with the detonating compositions which are used.

1665. (*Captain Mackinnon.*) We have had copper-rimmed cartridges in use, some of which were made in America and some in England. As a rule, the American copper was good and the cartridges stood well, but the cartridges made in England generally burst, and that I suppose was due to the bad quality of the copper?—It may have been due to a bad selection of copper; sheets of that metal vary very much in quality.

1666. What is the difficulty in getting it?—There is none in obtaining good metal, if a careful selection is made.

1667. I have been informed that notwithstanding that great care was taken in the selection of the copper, it was found most difficult to get copper of a good quality?—It is more difficult to get a good quality of copper sheet than to get a good quality of brass sheet. Copper sheet is more likely to vary and requires more careful selection. Copper, generally speaking, is of considerably higher quality in America than that which is ordinarily used here, and it requires great care in selection and inspection to secure a good quality.

1668. Does that depend upon the process of manufacturing the copper from the ore?—Yes; it depends mainly upon the condition and purity of the copper when it is converted into sheet.

1669. Would not the fact of there being this difficulty in getting copper of good quality be against the use of copper in the manufacture of cartridges if they were required to be made in large quantities to immediate order?—I should hardly think so. I consider that there would be no difficulty in obtaining sheet copper of proper quality by submitting supplies to careful inspection.

1670. Cartridge makers who have been making copper cartridges for competition, and whose interest it was therefore to make the best cartridges, have not succeeded?—That might depend upon the fact that the subject was new to them, and that they had not applied sufficient means for determining its quality. They may have been obliged to rely entirely upon those who supplied them with it; but I do not think there would be any difficulty in obtaining sheet copper, which would be as satisfactory as that which is used in America.

1671. (*Chairman.*) I suppose that brass would be more easily obtainable in England than copper?—It is not more easily obtainable, but the manufacture of that particular form of brass which is used for cartridges has attained a greater state of uniformity, and it is not so readily affected by slight differences in the quality of the copper used as would be the case if copper alone were employed. Brass being an alloy of copper with zinc, and the fact of the former metal receiving other properties by this alloying, does away to a certain extent with the influence of the impurities originally existing in the metal.

1670. Which is the cheaper of the two?—Brass would be the cheaper of the two.

The witness withdrew.

APPENDIX II.

EXTRACTS FROM VARIOUS REPORTS OF ORDNANCE SELECT COMMITTEE ON SYSTEMS OF RIFLING FOR SMALL ARMS, &c.

Report No. 2578, 26/11/62, of the Ordnance Select Committee, of which Br. Genl. St. George, C.B., R.A., was President.

* A trial between small and large bore rifles.

Par. 46. "Although it has been considered advisable for the sake of arriving at a fair and impartial comparison to make this* trial, the Committee would observe with respect to it, that no conclusion could have been expected other than what the results have shown, viz., the superior range and precision of the small bore rifles.

They think, therefore, in this instance, it will be sufficient to show the several figures obtained from the competing arms, observing only that the service powder was used with the large bores, while with the small bores, that powder was employed which experience has proved to be the best adapted to a small calibre, viz., Curtis and Harvey's No. 6."

TABLE 2.

Range.	300 Yards.	500 Yards.	800 Yards.	1,000 Yards.	1,200 Yards.
	Inches.	Inches.	Inches.	Inches.	Inches.
Whitworth - -	3·89	7·39	17·18	26·54	49·69
Enfield. D. - -	10.20	17·04	28·96	43·66	81·10
Lancaster - -	10·06	17·58	28·35	43·61	65·09

Par. 60. "The Committee are of opinion that as the present system of musketry instruction is calculated to produce ere long a very high standard of shooting throughout the army, the introduction of a weapon of great precision at long ranges would materially increase the general efficiency of the infantry, and place it in a better position to keep down the fire of the rifled artillery of the present day."

Report No. 3617, Minute 14,285, date 1/2/65, of th Ordnance Select Com mittee, of which Br. Genera Lefroy, R.A was Presi dent.

Par. 2. "Admitting that the calibre, ·577 inch of the present service Enfield is a fair medium gauge for a muzzle-loading arm, when the utmost regard must be had to freedom from fouling, the Committee think that the bore of a breech-loading arm may be considerably reduced without sacrificing this important condition, and looking to the very satisfactory results with Westley Richards' breech-loading rifles in 1864, they are of opinion that a calibre of ·450 inch may be safely adopted for the new arm."

Report No. 3654, Minute 14,730, date 14/3/65, of the Ordnance Select Committee of which Br. Genera Lefroy, R.A was Presi dent.

Par. 12. "The Committee have now respectfully to submit their observations on the whole question. The ultimate armament of the Infantry with breech-loading weapons, is determined upon. It would be done at a comparatively small cost by conversion, but it is now well known that the calibre, twist, and form of rifling of the Enfield is not the most favourable to fine shooting, and it is quite certain that no converted arms can possess the precision which will be easily attained in a new breech-loader of smaller gauge and quicker twist. Nor will the soldier be able to carry that increased quantity of ammunition which is so desirable without a reduction of calibre."

War Office advertisement to gunmakers and others, 21/6/65, signed by Maj. Genera J. St. George Director of Ordnance.

Par. 2. "The principal elements of the new breech-loading rifle, and the conditions on which persons will be allowed to compete, are as follows:

"1 Calibre, ·450 inches."

APPENDIX III.

LIST OF REJECTED ARMS AND CAUSES OF REJECTION.

Adams, ·577 inch.

In the damaged cartridge trial the breech block of this rifle was blown open, and the cartridge case blown out to the rear.

Amsler-Milbank, ·45 inch.

In this rifle the cartridge can be placed in front of the extractor.

Berdan, ·45 inch.

(1.) With spiral Spring Lock.

The breech block of this rifle was not properly secured to the barrel, which prevented the proper working of the breech mechanism.

Berdan, ·45 inch.

(2.) With Side Lock.

Unless carefully shut, the hammer of this rifle falls on the hinge that closes the breech instead of on the striker. The quick and proper working of the breech action depends upon the hinge called the "brace," which at once becomes affected by exposure to weather. The piston is liable to become fixed out by rust.

Berdan, ·45 inch.

(3.) Sliding Bolt.

This rifle was submitted after the committee had decided from previous experiments to reject all sliding bolt guns as being liable to accident with an over-sensitive cartridge.

Benson.

If dirt or sand enters the shoe of this rifle it causes miss-fires, and even prevents the bolt from entering the aperture in the block. The working of the breech mechanism is slow.

Braendlin Snider.

In this rifle there is a liability to miss-fires when sand or dirt clogs the breech, and prevents the bolt fairly entering the hole in the block. Other methods of securing the breech block are preferred.

Cole, ·577, ·45 inch.

These rifles were not fired, as they bore no proof marks. It is possible to place the cartridge in front of the extractor.

Conroy, ·577 inch.

The breech mechanism is more complicated than that of many other rifles. The rifle is a large bore, and consequently has a shorter cartridge than could be used in a small bore.

It is doubtful whether the extractor would answer with a long cartridge.

Cooper, ·577 inch.

In this rifle the breech block is kept open by a spring, which is always in a state of tension when the breech is closed. There is a liability to miss-fires.

**Chassepôt.*

There were continued miss-fires with this rifle, and considerable fouling about the point of the breech bolt. The India-rubber wad in the percussion cap was almost invariably left in the rifle after discharge, and was also blown into the breech-bolt, thus clogging the needle. After a miss-fire the ramrod has to be used to push out the cartridge.

Davies.

The breech mechanism of this rifle is more complicated than that of other systems, and the manipulation is slower.

Fosbery, ·5 inch, elevating block.

In the sand trial this rifle worked with difficulty. A touch of the finger is required to complete the ejection of the empty case.

Fosbery, ·45 inch, falling block.

In this rifle the extractor occasionally failed to withdraw the empty case, owing, as stated by Major Fosbery, to defective chambering. The breech cannot be closed after sand has been thrown on it.

Gordon.

This rifle is a modification of the Snider system. Rifles, in many respects resembling it, have been reported on.

Gielgud (Peabody), ·45 inch.

Mr. Gielgud withdrew this rifle, on being informed that other systems, on somewhat similar principles, were preferred to it.

Larsen, ·45 inch (4 rifles).

One rifle of this system was fired (due precautions being taken) with the breech-lever not quite home, the escape of gas destroyed the stock and rendered the arm unserviceable. All the rifles appear liable to an accident of this kind.

Money-Walker, ·5 inch.

By exposure to weather the breech mechanism of this rifle is liable to become jammed and unserviceable. A smart blow is necessary to ensure the breech mechanism being closed.

Mabbutt, ·577 inch.

The breech block is liable to fall down while the empty case is being thrown out. The manipulation is slow. Sand or dirt entering the hole which contains the plunger causes difficulty in opening the breech block.

Newark.

The breech mechanism of this rifle is a modification of the Snider principle.

The method of bolting down the block in this rifle appears simple. The wood of the stock is more cut away than is the case in an ordinary Snider block.

The Committee recommended that it should be brought under the notice of the Superintendent R.S.A. factories at Enfield.

Needham, ·577 inch.

Although the breech mechanism of this rifle is strong, it is not so handy as others.

Peabody, ·5 inch, with trigger guard lever, adapted for Boxer compressed powder cartridges.

In this rifle the breech action jammed during the rapidity trial, which had to be discontinued. The breech mechanism worked stiffly.

Peabody, ·45 inch, modified Peabody rifle with lever above, instead of below, adapted for Berdan central fire cartridges.

The Committee had before them rifles which they preferred to this. Mr. Gielgud accordingly withdrew it.

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* In some Chassepôts shown to the Committee on a subsequent date, which were stated to be of more perfect make, these miss-fires did not occur, but after a few rounds some difficulty was found in forcing the cartridges into the chamber.

Peabody—Gielgud—Wessely.

This rifle became unserviceable when sand was thrown on the breech open. The breech action is simple and strong. Mr. Wessely withdrew the arm stating that it was not a perfectly finished specimen.

Prussian Needle Gun.

The breech mechanism of this rifle was slower and more difficult of manipulation than that of many other arms brought before the Committee. The rifle is liable to the objection of arms using the paper cartridge. There was a great escape of gas at the breech.

Punshon Snider, ·577 inch.

The extractor of this rifle jammed when sand was thrown on the breech mechanism. After firing, the hammer frequently passed over the catch of the bolt, and so failed to release the spring which holds down the breech block. The breech was blown open by a damaged cartridge.

Reilly-Comblain, ·577 inch.

The Committee made no experiments with this arm as they had before them systems of breech mechanism which they preferred.

Ross (P. Campbell).

No ammunition was submitted with these rifles. Other systems are preferred.

Russian converted, ·577 inch Needle Rifle.

This rifle became unserviceable when fine sand was thrown over the breech arrangement. There was great difficulty in withdrawing the cartridge after a miss-fire.

Russ and Hammond ·577 *inch.*
„ „ ·45 *inch, Paper Cartridge.*

These rifles are slow in manipulation, although their breech mechanism is strong. Other systems are preferred.

Roden Snider.

With this rifle the jerk which is required to eject the empty case renders the breech block liable to fall over. The locking bolt appears to be inferior to other systems of securing the breech block.

Stoakes, ·577 inch.

The piston of this rifle being broken it could not be fired, and there was no suitable ammunition wherewith to try the small-bore barrel.

Stoakes, ·45 inch.

The breech mechanism is liable to be rendered unserviceable by sand or dirt entering the several parts. There were no proof marks on the rifles.

Stiff.

This rifle was not submitted until the Committee had expressed an opinion adverse to sliding bolt guns generally. They have before them other rifles on the bolt system which they prefer.

Tranter, ·577 inch.

This rifle became unserviceable when sand was thrown over the breech mechanism.

Wanzel (1), ·45 *inch.*
„ (2), ·45 *inch.*

There is liability to miss-fires and to failure in extraction of the cartridge case in these rifles. Other systems of breech-loading are preferred.

Werndle, ·45 inch.

In this rifle the action of the extractor is uncertain. Dirt or sand thrown over the breech arrangement prevents it from working.

Witney.

Dirt or sand entering the working parts of the breech action renders the gun quite useless. It is capable of being fired rapidly when in good working order.

Wyley (2 *rifles*), ·577 *inch.*
„ ·45 *inch.*

These rifles were received after the decision of the Committee against bolt guns. They have rifles before them on the bolt system which they prefer.

APPENDIX IV.

DESCRIPTION OF ARMS.

Bacon.

This rifle is adapted for the Boxer cartridge.

The breech is closed by a sliding bolt worked by a lever handle.

The explosion is caused by a direct acting piston driven by a strong spiral spring in the bolt, which also does the duty of a sear spring. The action of pushing forward the bolt and closing the breech, compresses the spring, and when the handle is turned down the arm is ready to be fired.

The empty cartridge case is withdrawn from the chamber and thrown out in drawing back the bolt to open the breech.

Berdan.

This rifle is adapted to Berdan central-fire drawn brass cartridges. The barrel and shoe are in one piece. The breech is closed by a block which folds forward on a hinge over the chamber.

The explosion is caused by a loose piston passing diagonally through the block, driven by the hammer of a common side lock. The breech is opened by raising and swinging forward the breech block; in doing so, the extractor spring is compressed and at the end of the motion suddenly released, causing the empty case to be flipped out.

A brace working in a mortice in the block, the rear end of which has a curve struck from a centre below the axis of the rifle, falls in shutting down the block into a corresponding curve in the shoe, and effectually prevents the possibility of the breech being blown open by a damaged cartridge.

Carter and Edwards.

This rifle is adapted for the Boxer cartridge. The breech is closed by a sliding bolt, worked by means of a lever handle curved down so as to lie when shut against the side of the stock, and prevent an unsightly appearance and the chance of catching in the clothes or accoutrements.

The cartridge is exploded by means of a direct acting loose piston passing through the bolt, and driven by a hammer and flat spring in the centre of the stock. This piston has a head, the inner face of which is cut in an incline, there being a similar incline on the heel of the bolt; it is of sufficient length to strike the cartridge only when these inclines coincide, and this can only occur when the handle of the bolt is turned down in a position of safety. In turning the bolt for the purpose of opening the breech, the piston head, which travels in a groove in the shoe, is unable to turn with it, and is consequently forced back and the piston withdrawn.

In drawing back the bolt the breech is opened, and

the hammer pressed down to full cock, the cartridge case is withdrawn into the shoe, and thrown out by a slight cant of the rifle.

When the bolt is pushed forward and the handle turned down into its place, the rifle is ready to be fired.

The lock arrangement is in five pieces, is very simple and strong; it can be carried at half cock, and is provided with a safety bolt.

Henry.

This rifle is adapted for the Boxer cartridge.

The breech is closed by means of a breech block which works vertically by the movement of a lever, which is fastened by a catch underneath the trigger guard; the same movement causes the extractor to eject the empty cartridge case.

The cartridge is exploded by a piston passing diagonally through the breech block, and driven by a common side-lock and hammer; on raising the hammer the piston is withdrawn by the action of a spiral spring.

Mr. Henry has another system of withdrawing the piston which dispenses with this spring, the piston being withdrawn by the act of opening the breech.

Kerr.

This rifle is adapted for the Boxer cartridge. The breech is closed by means of a sliding bolt, worked by a lever handle.

The cartridge is exploded by a direct acting piston which is driven by a common side-lock, and so arranged that it cannot be struck by the hammer until it is in a position of safety. On raising the hammer the piston is withdrawn by means of a spiral spring. Mr. Kerr, however, states that this spring could be dispensed with.

The discharged cartridge case is withdrawn from the chamber on drawing back the bolt, and is thrown out by giving the rifle a slight cant to the right.

There is a slight incline in the fore end of the shoe which gives to the bolt, in shutting and opening, a screw motion, the effect, in the first instance, being to gently but firmly press home the cartridge, the shock being taken by the shoe, and thereby the risk of an accidental explosion diminished; in the latter, to facilitate the extraction of the empty case.

Martini.

This arm is adapted for the Boxer cartridge.

The breech is closed by a block which swings on a pin passing through the upper rear end of the shoe, the recoil being taken by the shoe.

The cartridge is exploded by a direct acting piston, which is driven by the action of a strong spiral spring within the breech block.

This block is acted on by a lever to the rear of the trigger-guard. The act of pushing the lever forward causes the block to fall, the spring to be compressed, and the empty cartridge to be thrown out to the rear: on drawing back the lever, the block is raised so as to close the breech and the arm is ready to be fired. It can be placed at half-cock, and it is also provided with a safety bolt.

Money-Walker.

This arm is adapted for central fire metallic cartridges.

The breech is closed by means of a block, working on a pivot or centre which passes through it and the sides of the shoe, and which takes the whole recoil. The fore part of this block contains the lock, and the rear part serves as a lever handle: on raising the handle the fore part of the block is depressed, thereby opening the breech, compressing the spring which drives the piston, and causing the extractor to eject the empty case; on lowering the lever the breech is closed, and the arm is ready to be fired.

Westley Richards.—No. 1.

This rifle is adapted for a central fire metallic cartridge.

The breech is closed by a block swinging on a pin which passes through the upper rear end of the shoe.

The lock is contained in the block. By pushing forward a lever which is fastened by a catch to the trigger-guard, the block is lowered and the flat spring compressed, which acts on a hammer striking upwards and against the base of the piston which, when the block is opened, is always withdrawn, and a continuation of the motion causes the extractor, which is part of this lever, to withdraw the cartridge case: on drawing back the lever, the block is raised and the rifle ready to be fired.

Westley Richards.—No. 2.

This rifle is adapted for central fire metallic cartridges.

The breech block consists of two main parts connected by a hinge, and the whole fastened by a hinge to the upper part of the shoe, where the barrel is screwed in. The block which closes the breech contains the lock and piston, the other, or tail piece, is the lever by which the action is opened; when shut, this tail piece rests against the curved end of a corresponding curve in the shoe, both struck from a centre below the axis of the rifle, and thus making the action secure.

The breech is opened by raising the tail piece and continuing the motion so as to fold over the barrel the two pieces composing the action; in so doing, the spring which drives the piston is compressed, the piston withdrawn, and the extractor caused to withdraw the cartridge case.

In closing the breech, the block containing the lock is first lowered, and a continuation of the motion shuts the tail piece into its place; the rifle is then ready to be fired.

A more perfect description of these systems could have been given had they not been withdrawn by Mr. Westley Richards.

Wilson.

This rifle is adapted for the Boxer central fire cartridge.

The mechanism is on the bolt system.

The breech is closed by pushing forward the bolt with the ball of the hand, and when in its place is secured by two lugs on a movable collar, which are forced into corresponding slots in the shoe, by means of a spring in the shoe-cap.

The explosion is caused by a direct acting piston within the bolt, which is driven by a spiral spring: on withdrawing the bolt, the empty cartridge case is extracted and thrown out.

APPENDIX V.

TABLES OF PRACTICE.

ENFIELD.

No. of Target.	No. of Rifle.	Range in Yards.	Wind.	Observed Angle.	Trials.	Hits.	Misses.	Mean Deviation.	Corrected Angle.	Thermometer.	Hor. Dev. of M.I. from point aimed at.	Misfires.	Date.	Remarks.
				° ′				Feet.	° ′ ″	°	Feet.			
1	1	300	E. Light.	1 0	5	20	0	0·61	0 39 14	70	2·73	0	16/9/68	Cleaned.
2	,,	,,	,,	,,	1	,,	,,	0·61	0 39 49	0	1·95	,,	,,	,,
3	,,	,,	,,	,,	0	,,	,,	0·61	0 38 14	72	2·65	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	0·68	0 40 50	,,	2·26	,,	,,	,,
5	,,	,,	,,	,,	,,	,,	,,	0·59	0 41 20	,,	2·02	,,	,,	,,
6	2	,,	E. Strong.	,,	5	,,	,,	0 47	0 33 2	62	3·38	,,	17/9/68	Not cleaned.
7	,,	,,	,,	,,	0	,,	,,	0·49	0 34 44	,,	3·78	,,	,,	,,
8	,,	,,	,,	,,	,,	,,	,,	0·54	0 36 8	,,	3·69	,,	,,	,,
9	,,	,,	,,	,,	,,	,,	,,	0·55	0 36 2	,,	3·63	,,	,,	,,
10	,,	,,	,,	,,	,,	,,	,,	0·51	0 35 26	,,	3·61	,,	,,	,,
11	3	,,	,,	,,	5	,,	,,	0·53	0 34 8	69	3·93	,,	,,	Cleaned.
12	,,	,,	,,	,,	1	,,	,,	0·69	0 37 38	,,	4·06	,,	,,	,,
13	,,	,,	,,	,,	,,	,,	,,	0·68	0 37 26	,,	3·54	,,	,,	,,
14	,,	,,	,,	,,	,,	,,	,,	0·52	0 37 38	,,	3·91	,,	,,	,,
15	,,	,,	,,	,,	,,	,,	,,	0·66	0 35 25	,,	3·70	,,	,,	,,
16	4	,,	,,	,,	5	,,	,,	0·64	0 31 56	,,	3·96	,,	,,	Not cleaned.
17	,,	,,	,,	,,	0	,,	,,	0·66	0 33 38	,,	4·18	,,	,,	,,
18	,,	,,	,,	,,	,,	,,	,,	0·62	0 30 50	,,	3·80	,,	,,	,,
19	,,	,,	,,	,,	,,	,,	,,	0·66	0 30 44	,,	4·23	,,	,,	,,
20	,,	,,	,,	,,	,,	,,	,,	0·60	0 29 50	,,	3·99	,,	,,	,,
21	1	500	E. Light.	1 35	5	20	,,	1·07	1 4 8	67	4·36	,,	16/9/68	Not cleaned.
22	,,	,,	,,	,,	0	,,	,,	1·17	1 6 8	,,	4·86	,,	,,	,,
23	,,	,,	,,	,,	,,	,,	,,	1·14	1 7 26	,,	4·43	,,	,,	,,
24	,,	,,	,,	,,	,,	,,	,,	1·08	1 7 44	,,	3·44	,,	,,	,,
25	,,	,,	,,	,,	,,	,,	,,	1·09	1 9 14	,,	4·25	,,	,,	,,
26	2	,,	N.E. Light.	,,	5	,,	,,	1·23	1 11 56	65	4·53	,,	15/9/68	Cleaned.
27	,,	,,	,,	,,	1	,,	,,	1·05	1 13 20	,,	4·39	,,	,,	,,
28	,,	,,	,,	,,	,,	,,	,,	0·80	1 11 44	,,	2·86	,,	,,	,,
29	,,	,,	,,	,,	,,	,,	,,	1·01	1 10 38	,,	3·54	,,	,,	,,
30	,,	,,	,,	,,	,,	,,	,,	1·04	1 11 26	,,	4·76	,,	,,	,,
31	3	,,	,,	,,	5	20	,,	1·37	1 6 50	,,	3·85	,,	,,	Not cleaned.
32	,,	,,	,,	,,	1	,,	,,	1·21	1 9 14	,,	4·56	,,	,,	,,
33	,,	,,	,,	,,	0	,,	,,	1 30	1 11 56	,,	3·32	,,	,,	,,
34	,,	,,	,,	,,	1	,,	,,	1·06	1 11 44	,,	2·23	,,	,,	,,
35	,,	,,	,,	,,	1	,,	,,	1·07	1 12 2	,,	2·14	,,	,,	,,
36	4	,,	N. E. Fresh	1 30	4	,,	,,	1·44	1 1 20	,,	4·03	,,	14/9/68	Cleaned.
37	,,	,,	,,	,,	1	,,	,,	1·48	1 4 56	,,	5·25	,,	,,	,,
38	,,	,,	,,	,,	1	,,	,,	1·16	1 7 20	63	4·37	,,	,,	,,
39	,,	,,	,,	,,	1	,,	,,	1·13	1 4 44	,,	4·20	,,	,,	,,
40	,,	,,	,,	,,	1	19	,,	1·12	1 4 50	,,	3·70	,,	,,	,,
41	1	800	N. E. Strong	2 30	5	20	,,	3·49	2 0 26	68	3·03	,,	22/9/68	Not cleaned.
42	,,	,,	,,	,,	0	,,	,,	2·17	2 2 38	,,	1·77	,,	,,	,,
43	,,	,,	,,	,,	,,	,,	,,	2·01	2 3 26	,,	2·29	,,	,,	,,
44	,,	,,	,,	,,	,,	,,	,,	2·16	2 3 26	,,	2·10	,,	,,	,,
45	,,	,,	,,	,,	,,	,,	,,	2·25	2 3 8	,,	1·29	1	,,	,,
46	2	,,	,,	2 25	5	,,	,,	3·09	2 3 44	,,	2·48	,,	,,	Cleaned.
47	,,	,,	,,	,,	1	,,	,,	2·24	2 5 38	,,	0·20	,,	,,	,,
48	,,	,,	,,	,,	,,	,,	,,	2·14	2 5 20	,,	3·43	,,	,,	,,
49	,,	,,	,,	,,	,,	,,	,,	3·49	2 4 44	,,	0·88	,,	,,	,,
50	,,	,,	,,	,,	,,	19	1	3·76	2 4 14	,,	0·51	,,	,,	,,
51	3	,,	E. Fresh.	,,	5	20	0	2·01	2 1 50	72	12·40	,,	21/9/68	Not cleaned.
52	,,	,,	,,	,,	0	,,	,,	2·78	2 2 38	,,	13·46	,,	,,	,,
53	,,	,,	,,	,,	,,	,,	,,	1·85	2 1 8	,,	13·30	,,	,,	,,
54	,,	,,	,,	,,	,,	,,	,,	1·67	1 59 32	,,	13·58	,,	,,	,,
55	,,	,,	,,	,,	,,	The rest was found to be unsteady after this target was completed.								
56	4	,,	E. Light.	2 20	5	,,	,,	2·39	2 0 2	72	6·51	,,	,,	Cleaned.
57	,,	,,	,,	,,	1	,,	,,	2·50	2 2 50	,,	6·66	,,	,,	,,
58	,,	,,	,,	,,	,,	,,	,,	2·66	2 2 2	,,	5·72	,,	,,	,,
59	,,	,,	,,	,,	,,	,,	,,	2·84	2 0 50	,,	6·49	,,	,,	,,
60	,,	,,	,,	,,	,,	,,	,,	1·97	2 0 26	,,	6·51	,,	,,	,,
61	1	1,000	W.N.W. Light	3 5	5	20	0	4·32	2 41 32	67	3·60	0	24/9/68	Cleaned.
62	,,	,,	,,	,,	0	,,	,,	3·90	2 40 44	,,	2·19	,,	,,	,,
63	,,	,,	,,	,,	,,	,,	,,	3·81	2 42 20	,,	4·75	,,	,,	,,
64	,,	,,	,,	,,	,,	,,	,,	3·27	2 39 14	,,	3·81	,,	,,	,,
65	,,	,,	,,	,,	,,	19	1	4·34	2 41 56	,,	3·04	,,	,,	,,
66	2	,,	N.W. Light	3 15	6	18	2	4·49	2 51 8	,,	2·58	,,	,,	Not cleaned.
67	,,	,,	,,	,,	0	20	0	3·71	2 52 14	,,	2·19	,,	,,	,,
68	,,	,,	,,	,,	,,	,,	,,	2·41	2 49 20	,,	3·67	,,	,,	,,
69	,,	,,	,,	,,	,,	19	1	3·43	2 50 8	,,	2·57	,,	,,	,,
70	,,	,,	,,	,,	,,	,,	,,	3·71	2 51 44	,,	2·31	,,	,,	,,
71	3	,,	N.E. Fresh	,,	7	20	0	5·78	2 49 38	54	3 08	,,	1/10/68	Cleaned.
72	,,	,,	,,	,,	1	,,	,,	4·38	2 47 20	,,	7·25	,,	,,	,,
73	,,	,,	,,	,,	,,	19	1	4·29	2 50 56	,,	9·84	,,	,,	,,
74	,,	,,	,,	,,	,,	20	0	3·44	2 49 44	,,	6·37	,,	,,	,,
75	,,	,,	,,	,,	,,	18	2	5·79	2 52 8	,,	7·00	,,	,,	,,
76	4	,,	N.E. Strong	3 10	5	19	1	4·59	2 40 20	,,	9·24	,,	,,	Not cleaned.
77	,,	,,	,,	,,	0	20	0	4·13	2 41 44	,,	9·81	,,	,,	,,
78	,,	,,	,,	,,	,,	,,	,,	3·83	2 42 56	,,	8·16	,,	,,	,,
79	,,	,,	,,	,,	,,	,,	,,	4·59	2 45 56	,,	13·59	,,	,,	,,
80	,,	,,	,,	,,	,,	,,	,,	3·59	2 46 8	,,	12·87	2	,,	,,

HENRY.

1	1	300	N.E., Fresh	1 5	5	20	0	0 61	0 38 53	74	1·92	0	30/6/68	Cleaned.
2	,,	,,	,,	,,	1	,,	,,	0·58	0 38 23	,,	1·70	,,	,,	,,
3	,,	,,	,,	,,	,,	,,	,,	0·69	0 37 47	,,	1·46	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	0·59	0 38 17	,,	1·50	,,	,,	,,
5	,,	,,	,,	,,	,,	,,	,,	0·62	0 36 11	78	1·25	,,	,,	,,
6	2	,,	,,	,,	5	,,	,,	0·56	0 27 41	71	0·79	,,	,,	Not cleaned.
7	,,	,,	,,	,,	0	,,	,,	0·45	0 33 5	,,	0·64	,,	,,	,,

HENRY—*continued.*

No. of Target.	No. of Rifle.	Range in Yards.	Wind.	Observed Angle.	Trials.	Hits.	Misses.	Mean Deviation.	Corrected Angle.	Thermometer.	Hor. Dev. of M.I. from point aimed at.	Missfires.	Date.	Remarks.
				° ′				feet.	° ′ ″	°	feet.			
8	2	300	N.E. Fresh	1 5	0	20	0	0·41	0 32 53	71	0·57	0	30/6/68	Not cleaned.
9	,,	,,	,,	,,	,,	,,	,,	0·42	0 32 11	,,	0·46	,,	,,	,,
10	,,	,,	,,	,,	,,	,,	,,	0·50	0 29 53	,,	0·60	,,	,,	,,
11	3	,,	,,	,,	5	,,	,,	0·66	0 35 11	,,	0·55	,,	,,	,,
12	,,	,,	,,	,,	1	,,	,,	0·72	0 41 53	,,	0·72	,,	,,	,,
13	,,	,,	,,	,,	,,	,,	,,	0·62	0 42 41	,,	1·33	,,	,,	,,
14	,,	,,	,,	,,	0	,,	,,	0·54	0 38 29	,,	1·44	,,	,,	,,
15	,,	,,	,,	,,	,,	,,	,,	0·63	0 41 47	,,	1·46	,,	,,	,,
16	4	,,	N.E., Strong	,,	5	,,	,,	0·66	0 41 47	63	0·75	,,	1/7/68	Cleaned.
17	,,	,,	,,	,,	0	,,	,,	0·68	0 44 35	,,	1·30	,,	,,	,,
18	,,	,,	,,	,,	,,	,,	,,	0·65	0 42 59	,,	1·70	,,	,,	,,
19	,,	,,	,,	,,	,,	,,	,,	0·74	0 43 23	,,	0·80	,,	,,	,,
20	,,	,,	,,	,,	,,	,,	,,	0·68	0 43 17	,,	1·04	,,	,,	,,
21	1	500	W., Light	1 40	3	20	0	0·86	1 9 17	74	2·13	,,	23/6/68	,,
22	,,	,,	,,	,,	1	,,	,,	1·01	1 11 53	,,	2·25	,,	,,	,,
23	,,	,,	,,	,,	,,	,,	,,	0·91	1 10 53	77	3·49	1	,,	,,
24	,,	,,	,,	,,	,,	,,	,,	1·03	1 11 11	,,	0·82	0	,,	,,
25	,,	,,	,,	,,	,,	,,	,,	1·47	1 8 41	,,	1·39	,,	,,	,,
26	2	,,	W., Fresh	,,	5	,,	,,	1·49	1 6 5	76	2·77	,,	24/6/68	Not cleaned.
27	,,	,,	,,	,,	0	,,	,,	1·11	1 9 53	77	2·59	,,	,,	,,
28	,,	,,	,,	,,	,,	,,	,,	0·86	1 9 23	,,	2·51	,,	,,	,,
29	,,	,,	,,	,,	,,	,,	,,	0·83	1 12 11	,,	2·12	,,	,,	,,
30	,,	,,	,,	,,	,,	,,	,,	1·04	1 11 41	,,	2·23	,,	,,	,,
31	3	,,	,,	,,	5	,,	,,	0·92	1 2 23	70	1·14	,,	,,	Cleaned.
32	,,	,,	,,	,,	1	,,	,,	0·93	1 3 47	,,	1·80	1	,,	,,
33	,,	,,	,,	,,	,,	,,	,,	0·75	1 4 17	,,	1·80	0	,,	,,
34	,,	,,	,,	,,	,,	,,	,,	0·67	1 4 5	,,	1·88	,,	,,	,,
35	,,	,,	,,	,,	,,	,,	,,	1·21	1 4 5	78	1·35	,,	,,	,,
36	4	,,	N.W. by W., Fresh.	,,	5	,,	,,	0·94	1 7 59	73	2·46	,,	25/6/68	Not cleaned.
37	,,	,,	,,	,,	0	,,	,,	0·83	1 10 59	,,	1·89	,,	,,	,,
38	,,	,,	,,	,,	,,	,,	,,	0·99	1 12 5	,,	2·35	,,	,,	,,
39	,,	,,	,,	,,	,,	,,	,,	1·24	1 12 5	,,	2·28	,,	,,	,,
40	,,	,,	,,	,,	,,	,,	,,	1·30	1 11 23	,,	2·33	,,	,,	,,
41	1	800	N.E., Gusty	2 25	5	20	0	2·45	1 59 59	75·5	3·01	,,	3/7/68	,,
42	,,	,,	,,	,,	1	,,	,,	2·35	2 5 5	,,	2·89	,,	,,	,,
43	,,	,,	,,	,,	,,	,,	,,	2·09	2 3 35	77	1·88	,,	,,	,,
44	,,	,,	,,	,,	,,	,,	,,	2·53	2 3 59	75	2·42	,,	,,	,,
45	,,	,,	,,	,,	,,	,,	,,	2·31	2 5 17	,,	1·40	,,	,,	,,
46	2	,,	N.E., Fresh and variable.	,,	5	,,	,,	2·34	2 0 53	77	3·41	,,	,,	Cleaned.
47	,,	,,	,,	,,	1	,,	,,	2·32	2 4 5	,,	0·65	,,	,,	,,
48	,,	,,	,,	,,	,,	,,	,,	2·13	2 4 47	,,	3·59	,,	,,	,,
49	,,	,,	,,	,,	,,	,,	,,	2·20	2 5 59	,,	1·50	,,	,,	,,
50	,,	,,	,,	,,	,,	,,	,,	2·52	2 5 29	,,	0·88	,,	,,	,,
51	3	,,	N.W., Fresh	,,	5	,,	,,	1·79	2 0 29	70	0·93	,,	,,	Not cleaned.
52	,,	,,	,,	,,	0	,,	,,	1·58	2 2 29	,,	0·32	,,	,,	,,
53	,,	,,	,,	,,	,,	,,	,,	1·84	2 3 17	,,	0·54	,,	,,	,,
54	,,	,,	,,	,,	,,	,,	,,	1·98	2 3 59	,,	0·86	,,	,,	,,
55	,,	,,	,,	,,	,,	,,	,,	2·07	2 2 47	,,	0·74	,,	,,	,,
56	4	,,	N.E., Strong	2 30	6	19	1	2·72	2 4 41	69	0·82	,,	1/7/68	Cleaned.
57	,,	,,	,,	,,	1	20	0	2·50	2 7 17	,,	1·52	,,	,,	,,
58	,,	,,	,,	,,	1	,,	,,	2·15	2 4 47	,,	0·75	,,	,,	,,
59	,,	,,	,,	,,	2	,,	,,	2·22	2 5 29	,,	2·31	,,	,,	,,
60	,,	,,	,,	,,	1	,,	,,	2·39	2 4 53	,,	1·01	,,	,,	,,
61	1	1,000	N. Light -	3 5	5	20	0	2·31	2 44 53	72	8·62	,,	6/7/68	,,
62	,,	,,	,,	,,	1	,,	,,	2·93	2 45 35	,,	5·88	,,	,,	,,
68	,,	,,	,,	,,	,,	,,	,,	2·42	2 43 29	,,	9·89	,,	,,	,,
64	,,	,,	,,	,,	,,	,,	,,	2·62	2 43 17	,,	10·40	,,	,,	,,
65	,,	,,	,,	,,	,,	,,	,,	2·95	2 43 59	,,	11·07	,,	,,	,,
66	2	,,	,,	,,	5	19	1	3·11	2 46 59	70	7·81	,,	,,	Not cleaned.
67	,,	,,	,,	,,	0	18	2	3·85	2 50 41	,,	9·06	,,	,,	,,
68	,,	,,	,,	3 17	,,	20	0	3·43	2 49 29	,,	6·84	,,	,,	,,
69	,,	,,	,,	,,	,,	,,	,,	2·91	2 51 5	,,	6·20	,,	,,	,,
70	,,	,,	,,	,,	,,	,,	,,	3·34	2 53 59	,,	5·72	,,	7/7/68	,,
71	3	,,	,,	3 5	5	19	1	3·42	2 46 17	73	9·08	,,	,,	,,
72	,,	,,	,,	,,	0	20	0	2·57	2 45 47	,,	8·78	,,	,,	,,
73	,,	,,	,,	,,	,,	,,	,,	3·54	2 47 47	,,	11·00	,,	,,	,,
74	,,	,,	,,	,,	,,	19	1	3·42	2 47 47	,,	4·65	,,	,,	,,
75	,,	,,	,,	,,	,,	20	0	2·63	2 46 29	,,	5·17	,,	,,	,,
76	4	,,	,,	,,	5	19	1	2·96	2 47 17	75	3·00	,,	,,	Cleaned.
77	,,	,,	,,	3 10	1	20	0	2·73	2 46 11	,,	4·24	,,	,,	,,
78	,,	,,	,,	,,	,,	,,	,,	1·95	2 47 5	,,	3·08	,,	,,	,,
79	,,	,,	,,	,,	,,	,,	,,	2·97	2 47 47	,,	2·75	,,	,,	,,
80	,,	,,	,,	,,	,,	,,	,,	2·34	2 45 35	,,	4·29	,,	,,	,,

Men were working behind the butts during the firing of the Henry rifle at the 1,000 yards range, and consequently it was necessary to make the point of impact lower than usual in order to prevent the chance of a shot going over the target. Thus misses (short) occurred in shots which would otherwise have struck the target, and the average was consequently slightly deteriorated.

LANCASTER.

1	4	500	N.W. Light	1 50	5	20	0	1·05	1 18 14	48	4·06	0	19/10/68	Cleaned.
2	,,	,,	,,	,,	1	,,	,,	1·13	1 17 14	,,	3·63	,,	,,	,,
3	,,	,,	,,	,,	1	,,	,,	1·33	1 20 2	,,	2·83	,,	,,	,,
4	,,	,,	,,	,,	1	,,	,,	0·82	1 21 50	,,	2·47	,,	,,	,,
5	,,	800	,,	2 40	5	20	0	2·18	2 14 14	44	0·07	,,	22/10/68	Not cleaned.
6	,,	,,	,,	,,	0	,,	,,	1·77	2 15 14	,,	0·37	,,	,,	,,
7	,,	,,	,,	,,	,,	19	1	2·89	2 17 14	,,	1·25	,,	,,	,,
8	,,	,,	,,	,,	,,	19	1	2·43	2 16 14	,,	1·89	,,	,,	,,
9	,,	,,	,,	,,	,,	19	0	1·45	2 16 50	,,	2·35	,,	,,	,,
10	,,	1,000	W. Light -	3 30	9	18	2	6·59	3 4 8	52	15·94	,,	26/10/68	,,
11	,,	,,	,,	,,	0	20	0	3·74	3 4 14	,,	16·05	,,	,,	,,
12	,,	,,	,,	,,	,,	19	1	4·95	3 5 50	,,	15·22	,,	,,	,,
13	,,	,,	,,	,,	,,	20	0	3·25	3 5 20	,,	16·55	,,	,,	,,
14	,,	,,	,,	,,	,,	19	1	4·73	3 5 32	,,	11·92	,,	,,	,,

Rigby.

No. of Target.	No. of Rifle.	Range in Yards.	Wind.	Observed Angle.	Trials.	Hits.	Misses.	Mean Devintion.	Corrected Angle.	Thermometer.	Hor. Dev. of M.I. from point aimed at.	Misfires.	Date.	Remarks.
				° ′				feet.	° ′ ″	°	feet.			
1	1	500	N.E. Light	1 50	5	20	0	1·59	1 0 0	40	0·12	0	18/11/68	Not cleaned.
2	,,	,,	,,	,,	0	,,	,,	2·13	1 0 0	,,	0·72	,,	,,	,,
3	2	,,	NNW. Light	,,	5	,,	,,	2·39	- - -	42	2·64	,,	23/11/68	,,
4	,,	,,	,,	,,	0	,,	,,	1·71	- - -	,,	2·36	,,	,,	,,
5	,,	,,	,,	,,	,,	19	1	2·51	- - -	,,	2·41	,,	,,	,,
6	,,	,,	,,	,,	,,	,,	,,	2·75	- - -	,,	0·93	,,	,,	,,
7	3	,,	,,	,,	5	20	0	1·72	- - -	,,	0·39	,,	,,	,,
8	,,	,,	,,	,,	0	,,	,,	1·15	- - -	,,	0·53	,,	,,	,,

Westley Richards.

1	1	500	N.W. Light	1 50	4	20	0	1·35	1 12 18	54	0·38	0	8/10/68	Not cleaned.
2	,,	,,	,,	,,	0	,,	,,	1·10	1 15 30	,,	0·59	,,	,,	,,
3	,,	,,	,,	,,	,,	,,	,,	1·23	1 17 36	,,	0·15	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	1·38	1 18 42	,,	0·46	1	,,	,,
5	,,	,,	,,	,,	,,	,,	,,	1·46	1 19 36	,,	0·62	0	,,	,,
6	,,	,,	E. Light	,,	3	,,	,,	1·10	1 17 42	66	3·20	,,	12/10/68	Cleaned.
7	,,	,,	,,	,,	1	,,	,,	1·35	1 18 18	,,	3·12	1	,,	,,
8	,,	,,	,,	,,	,,	,,	,,	1·90	1 18 54	,,	3·47	0	,,	,,
9	,,	,,	,,	,,	,,	,,	,,	1·16	1 19 42	,,	3·38	,,	,,	,,
10	,,	,,	,,	,,	,,	,,	,,	1·46	1 18 36	,,	3·38	,,	,,	,,

Whitworth.

1	1	300	S.E., Fresh	1 15	5	20	0	0·52	0 45 31	68	1·61	0	18/8/68	Not cleaned.
2	,,	,,	Light	,,	0	,,	,,	0·52	0 47 49	,,	1·50	,,	,,	,,
3	,,	,,	,,	,,	,,	,,	,,	0·56	0 47 19	,,	1·42	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	0·77	0 48 7	,,	1·36	,,	,,	,,
5	,,	,,	,,	,,	,,	,,	,,	0·72	0 51 25	,,	1·65	,,	,,	,,
6	2	,,	S.E., Fresh	1 5	5	,,	,,	0·52	0 33 25	66	3·08	,,	,,	Cleaned.
7	,,	,,	,,	,,	1	,,	,,	0·67	0 36 37	,,	2·87	,,	,,	,,
8	,,	,,	,,	,,	,,	,,	,,	0·59	0 27 19	68	2·79	,,	,,	,,
9	,,	,,	,,	,,	,,	,,	,,	0·74	0 40 1	,,	2·71	,,	,,	,,
10	,,	,,	,,	,,	,,	,,	,,	0·62	0 40 43	,,	2·62	,,	,,	,,
11	3	,,	N.N.E., Fresh	1 15	5	,,	,,	0·60	0 42 7	65	0·29	,,	17/8/68	,,
12	,,	,,	,,	,,	0	,,	,,	0·67	0 42 13	,,	0·59	,,	,,	,,
13	,,	,,	,,	,,	1	,,	,,	0·61	0 44 55	,,	1·48	,,	,,	,,
14	,,	,,	,,	,,	0	,,	,,	0·70	0 43 21	,,	1·19	,,	,,	,,
15	,,	,,	,,	,,	,,	,,	,,	0·63	0 44 37	,,	0·97	,,	,,	,,
16	4	,,	N.N.E., Light	,,	5	,,	,,	0·62	0 43 55	70	0·26	,,	,,	Not cleaned.
17	,,	,,	,,	,,	1	,,	,,	0·44	0 43 43	,,	0·06	,,	,,	,,
18	,,	,,	,,	,,	,,	,,	,,	0·40	0 43 31	,,	0·36	,,	,,	,,
19	,,	,,	,,	,,	,,	,,	,,	0·60	0 43 19	65	0·07	,,	,,	,,
20	,,	,,	,,	,,	,,	,,	,,	0·64	0 44 33	,,	0·29	,,	,,	,,
21	1	500	E., Light	1 45	5	,,	,,	0·88	1 8 31	80	6·04	,,	10/8/68	Cleaned.
22	,,	,,	,,	,,	1	,,	,,	1·39	1 11 7	,,	5·02	,,	,,	,,
23	,,	,,	,,	,,	,,	,,	,,	0·98	1 12 25	,,	6·02	,,	,,	,,
24	,,	,,	,,	,,	,,	,,	,,	1·05	1 12 7	81	6·22	,,	,,	,,
25	,,	,,	,,	,,	,,	,,	,,	1·07	1 12 37	,,	5·94	,,	,,	,,
26	2	,,	W.S.W. Fresh	,,	5	,,	,,	1·59	1 7 49	72	1·54	,,	11/8/68	Not cleaned.
27	,,	,,	,,	,,	0	19	1	2·08	1 14 13	,,	0·77	,,	,,	,,
28	,,	,,	,,	1 52	1	20	0	1·61	1 10 25	78	1·42	,,	,,	,,
29	,,	,,	,,	,,	0	,,	,,	1·13	1 9 1	,,	1·44	,,	,,	,,
30	,,	,,	,,	,,	,,	,,	,,	1·12	1 9 49	,,	0·04	,,	,,	,,
31	3	,,	S.W., Fresh	1 45	5	,,	,,	1·12	1 10 43	73	0·04	,,	,,	,,
32	,,	,,	,,	,,	1	,,	,,	1·18	1 13 7	,,	0·42	,,	,,	,,
33	,,	,,	,,	,,	,,	,,	,,	0·95	1 12 43	,,	0·96	,,	,,	,,
34	,,	,,	,,	,,	,,	,,	,,	0·91	1 11 7	,,	0·59	,,	,,	,,
35	,,	,,	,,	,,	,,	,,	,,	1·31	1 11 37	,,	0·97	,,	,,	,,
36	4	,,	S.S.W., Fresh	1 55	5	,,	,,	1·49	1 15 49	75	1·03	,,	,,	Cleaned.
37	,,	,,	,,	,,	0	,,	,,	1·27	1 16 49	,,	1·37	,,	,,	,,
38	,,	,,	,,	,,	,,	,,	,,	1·05	1 15 13	,,	1·30	,,	,,	,,
39	,,	,,	,,	,,	,,	,,	,,	1·19	1 13 13	,,	0·40	,,	,,	,,
40	,,	,,	,,	,,	,,	,,	,,	1·48	1 12 43	,,	1·23	,,	,,	,,
41	1	800	S.E., Light	2 40	5	,,	,,	3·24	2 8 49	69	4·76	,,	19/8/68	,,
42	,,	,,	,,	,,	1	,,	,,	2·36	2 9 43	,,	3·87	,,	,,	,,
43	,,	,,	,,	,,	,,	,,	,,	2·00	2 7 55	73	5·29	,,	,,	,,
44	,,	,,	,,	,,	,,	19	1	3·36	2 4 31	74	4·24	,,	,,	,,
45	,,	,,	,,	,,	,,	18	2	3·57	2 3 19	,,	5·10	,,	,,	,,
46	2	,,	,,	2 30	5	18	2	5·10	1 56 49	68	7·65	,,	,,	Not cleaned.
47	,,	,,	,,	,,	,,	18	2	4·14	1 54 33	,,	8·27	,,	,,	,,
48	,,	,,	,,	,,	1	20	0	1·94	1 52 7	,,	9·06	,,	,,	,,
49	,,	,,	,,	,,	0	,,	,,	1·98	1 53 55	,,	7·36	2	,,	,,
50	,,	,,	,,	,,	,,	,,	,,	2·40	1 56 31	,,	6 60	0	,,	,,
51	3	,,	North, Fresh	2 40	5	19	1	4·73	2 5 37	65	3·47	,,	20/8/68	Cleaned.
52	,,	,,	,,	,,	1	19	1	4·27	2 6 31	,,	6·91	,,	,,	,,
53	,,	,,	,,	,,	,,	20	0	3·57	2 8 25	,,	5·58	,,	,,	,,
54	,,	,,	,,	,,	,,	18	2	5·64	2 10 19	,,	4·41	,,	,,	,,
55	,,	,,	,,	,,	,,	19	1	4·21	2 9 55	,,	4·93	,,	,,	,,
56	4	,,	,,	2 45	0	18	2	4·53	2 15 7	63	6·54	,,	,,	Not cleaned.
57	,,	,,	,,	,,	,,	20	0	2·30	2 8 37	,,	4·52	,,	,,	,,
58	,,	,,	,,	,,	,,	,,	,,	2·45	2 6 1	,,	3·48	,,	,,	,,
59	,,	,,	,,	,,	,,	,,	,,	2·48	2 7 49	,,	3·84	,,	,,	,,
60	,,	,,	,,	,,	,,	,,	,,	2·92	2 6 31	,,	2·46	,,	,,	,,

Snider 0·5 inch Bore.

1	1	300	N.E. Fresh	1 5	5	20	0	0·58	0 30 2	74	1·28	0	30/6/68	Cleaned.
2	,,	,,	,,	,,	1	,,	,,	0·66	0 30 8	,,	1·10	,,	,,	,,
3	,,	,,	,,	,,	,,	,,	,,	0·56	0 28 32	,,	1·04	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	0·60	0 27 44	78	0·92	,,	,,	,,
5	,,	,,	,,	,,	,,	,,	,,	0·56	0 28 2	71	0·62	,,	,,	,,
6	2	,,	,,	,,	5	,,	,,	0·70	0 32 26	,,	1·38	,,	,,	Not cleaned.

Snider 0·50″ Bore—*continued.*

No. of Target.	No. of Rifle.	Range in Yards.	Wind.	Observed Angle.	Trials.	Hits.	Misses.	Mean Deviation.	Corrected Angle.	Thermometer.	Hor. Dev. of M.I. from point aimed at.	Misfires.	Date.	Remarks.
				° ′				feet.	° ′ ″	°	feet.			
7	2		N.E. Fresh	1 5	0	20	0	0·49	0 33 2	71	0·75	0	30/6/68	Not cleaned.
8	,,		,,	,,	,,	,,	,,	0·46	0 32 8	,,	0·65	,,	,,	,,
9	,,	,,	,,	,,	,,	,,	,,	0·58	0 32 10	,,	1·05	,,	,,	,,
10	,,	,,	,,	,,	,,	,,	,,	0·73	0 30 26	,,	1·05	,,	,,	,,
11	1	500	W. Light	1 35	3	,,	,,	1·03	1 1 50	74	1·72	,,	23/6/68	Cleaned.
12	,,	,,	,,	,,	1	,,	,,	0·98	1 2 38	,,	1·39	,,	,,	,,
13	,,	,,	,,	,,	,,	,,	,,	1·26	1 4 2	,,	0·42	,,	,,	,,
14	,,	,,	,,	,,	,,	,,	,,	1·14	1 1 20	77	2·99	,,	,,	,,
15	,,	,,	,,	,,	,,	,,	,,	0·71	1 2 50	,,	7·00	,,	,,	,,
16	1	,,	W. Fresh	,,	5	,,	,,	0·93	1 6 50	76	5·78	,,	,,	Not cleaned.
17	,,	,,	,,	,,	0	,,	,,	1·07	1 6 32	77	5·56	,,	,,	,,
18	,,	,,	,,	,,	,,	,,	,,	1·17	1 6 2	,,	5·91	,,	,,	,,
19	,,	,,	,,	,,	,,	,,	,,	1·14	1 5 14	,,	5·23	,,	,,	,,
20	,,	,,	,,	,,	,,	,,	,,	1·36	1 2 56	,,	5·40	,,	,,	,,
21	2	,,	,,	,,	5	,,	,,	0·98	1 6 2	70	1·88	,,	24/6/68	Cleaned.
22	,,	,,	,,	,,	1	,,	,,	0·91	1 5 38	,,	5·58	,,	,,	,,
23	,,	,,	,,	,,	,,	,,	,,	1·08	1 5 2	,,	5·89	,,	,,	,,
24	,,	,,	,,	,,	,,	,,	,,	1·23	1 6 20	,,	4·53	,,	,,	,,
25	,,	,,	,,	,,	,,	,,	,,	1·60	1 6 26	78	4·18	,,	,,	,,
26	1	,,	N.W. by W. Fresh.	,,	5	,,	,,	1·12	1 10 8	73	6·25	,,	25/6/68	Not cleaned.
27	,,	,,	,,	,,	0	,,	,,	1·22	1 6 56	,,	5·57	,,	,,	,,
28	,,	,,	,,	,,	,,	,,	,,	1·09	1 6 50	,,	5·95	,,	,,	,,
29	,,	,,	,,	,,	,,	,,	,,	1·02	1 6 44	,,	5·53	,,	,,	,,
30	,,	,,	,,	,,	,,	,,	,,	1·09	1 5 26	,,	5·17	,,	,,	,,
31	1	800	N.W. Fresh	2 30	5	,,	,,	1·95	2 8 32	70	7·64	0	3/7/68	,,
32	,,	,,	,,	,,	0	,,	,,	3·15	2 6 14	,,	6·20	,,	,,	,,
33	,,	,,	,,	,,	,,	,,	,,	2·27	2 6 50	,,	5·90	,,	,,	,,
34	,,	,,	,,	,,	,,	,,	,,	2·45	2 7 10	,,	4·98	,,	,,	,,
35	,,	,,	,,	,,	,,	,,	,,	2·49	2 9 20	,,	4·74	,,	,,	,,
36	2	,,	N.E. Strong	2 40	6	,,	,,	3·14	2 21 38	69	5·58	,,	1/7/68	Cleaned.
37	,,	,,	,,	,,	1	,,	,,	2·72	2 20 20	,,	0·87	,,	,,	,,
38	,,	,,	,,	,,	,,	,,	,,	2·96	2 20 38	,,	2·21	,,	,,	,,
39	,,	,,	,,	,,	2	,,	,,	3·21	2 16 20	,,	0·68	,,	,,	,,
40	,,	,,	,,	,,	1	,,	,,	3·02	2 19 44	,,	0·71	,,	,,	,,
41	1	1,000	W. Fresh	3 35	9	,,	,,	3·63	3 17 38	53	29·58	,,	21/10/68	Not cleaned.
42	,,	,,	,,	,,	1	,,	,,	3·11	3 18 38	,,	27·90	,,	,,	,,
43	,,	,,	,,	,,	,,	19	1	4·57	3 14 44	,,	28·53	,,	,,	,,
44	,,	,,	,,	,,	,,	20	0	3·87	3 15 26	,,	27·66	,,	,,	,,
45	,,	,,	,,	,,	,,	19	1	4·61	3 13 50	,,	26·99	,,	,,	,,
46	2	,,	W. Light	3 50	9	20	0	4·01	3 33 8	52	32·35	,,	26/10/68	,,
47	,,	,,	,,	,,	0	19	1	4·33	3 31 20	,,	31·87	,,	,,	,,
48	,,	,,	,,	,,	,,	18	2	6·51	3 29 38	,,	32·03	,,	,,	,,
49	,,	,,	,,	,,	,,	19	1	4·54	3 30 2	,,	32·01	,,	,,	,,
50	,,	,,	,,	,,	,,	20	0	5·11	3 28 50	,,	29·08	,,	,,	,,

Henry.—Fouling Trial.

1	2	500	N.W. Light.	1 45	2	20	0	1·03	1 13 17	42	1·44	0	20/10/68	Not cleaned. The last target was made after firing 122 rounds without cleaning out.
2	,,	,,	,,	,,	0	,,	,,	0·95	1 15 35	,,	1·87	,,	,,	
3	,,	,,	,,	,,	,,	,,	,,	0·92	1 16 23	,,	1·76	,,	,,	
4	,,	,,	,,	,,	,,	,,	,,	1·13	1 15 17	,,	1·78	,,	,,	
5	,,	,,	,,	,,	,,	,,	,,	0·97	1 15 47	,,	1·64	1	,,	
6	,,	,,	,,	,,	,,	,,	,,	0·92	1 15 17	,,	3·58	0	,,	
7	,,	,,	,,	,,	1	,,	,,	1·44	1 11 47	,,	2·59	,,	,,	Not cleaned. The last target was made after 81 rounds had been fired without cleaning.
8	,,	,,	,,	,,	0	,,	,,	1·29	1 20 5	,,	1·53	,,	,,	
9	,,	,,	,,	,,	0	,,	,,	1·08	1 18 17	,,	1·95	,,	,,	

Westley Richards.

1	1	500	S.	1 25	5	20	0	1·44	1 4 6	65	0·52	0	29/9/68	Brass cartridge case, bottle-necked.
2	Falling	,,	Very strong.	1 35	5	,,	,,	1·34	1 16 18	,,	0·24	,,	,,	
3	,,	,,	,,	,,	1	,,	,,	1·10	1 15 0	,,	0·57	,,	,,	
4	block.	,,	,,	,,	1	,,	,,	1·27	1 13 12	,,	0·23	,,	,,	
5	,,	,,	,,	,,	1	,,	,,	1·47	1 12 42	,,	0·83	,,	,,	
6	,,	,,	Strong.	,,	5	,,	,,	1·41	1 12 36	54	0·72	,,	30/9/68	
7	,,	,,	,,	,,	0	,,	,,	1·31	1 12 24	,,	1·86	,,	,,	
8	,,	,,	,,	,,	,,	,,	,,	1·47	1 12 6	,,	0·94	,,	,,	
9	,,	,,	,,	,,	,,	,,	,,	1·67	1 10 30	,,	1·91	,,	,,	
10	,,	,,	,,	,,	,,	,,	,,	1·81	1 13 0	,,	1·91	,,	,,	
11	,,	1,000	N.E.	3 25	7	17	3	6·27	3 10 42	54	1·17	,,	1/10/68	
12	,,	,,	Fresh.	3 30	1	18	2	5·13	3 6 42	,,	5·36	,,	,,	
13	,,	,,	,,	,,	1	18	2	6·65	3 7 6	,,	0·79	,,	,,	

1	1	800	S.W.	2 18	5	19	1	3·73	1 50 0	45	1·45	0	28/10/68	Henry barrel, bottle-necked chamber, brass drawn cartridge, shoulder, bullet.
2	Elevating	,,	Very light.	,,	1	20	0	4·31	1 55 54	,,	0·38	,,	,,	
3	,,	,,	,,	,,	,,	,,	,,	2·23	1 51 6	,,	0·88	,,	,,	
4	block.	,,	,,	,,	,,	,,	,,	2·48	1 50 0	,,	0·03	1	,,	
5	,,	,,	,,	,,	,,	19	1	2·68	1 50 42	,,	1·15	0	,,	
6	,,	,,	W.	,,	5	20	0	2·99	1 52 36	46	14·72	,,	29/10/68	
7	,,	,,	Strong and gusty.	,,	0	,,	,,	3·68	1 53 48	,,	15·98	,,	,,	
8	,,	,,	,,	,,	,,	,,	,,	2·13	1 50 48	,,	12·94	,,	,,	
9	,,	,,	,,	,,	,,	18	2	3·88	1 48 0	,,	12·88	,,	,,	
10	,,	,,	,,	,,	,,	19	1	4·23	1 48 6	,,	13·85	,,	,,	

APPENDIX VI.

LETTER FROM MR. LANCASTER.

151 New Bond Street, London,
SIR, September 21st.

IN reply to *Ordnance Select Committee letter, 16/9/68 min. $\frac{2560}{3}$, and in reference to the interview of Thursday last, I beg to inform you that the six barrels rifled on my system for loose powder are quite ready and shall be forwarded this week.

As I had the honour of explaining personally, I have to regret that I have not been able to complete the series of trials necessary to determine the proper ammunition to be used, every trial having to be conducted by myself, no person in my employ being capable of so responsible a duty, and being unable, owing to the requirements of my private business, to devote two months undivided attention away from it, the time a proper investigation of the subject would demand. Still, permit me to assure the committee that I have, so far as was in my power, devoted myself to the purposes of the government in this matter.

If therefore it is found by the committee that through any lack of time necessary for the trials of ammunition to develop the full merits of the system of rifling the shooting is not equal to the requirements, it will be to me a matter of great regret; but I shall not the less accept any conclusions arrived at by the committee on breech-loading rifles, although I am satisfied that all things being equal, the oval bore system will hold its own with any other system of rifling as proved by 18 years continuous trials by the Ordnance Select Committee, and on service, the question of ammunition being one merely involving a certain expenditure of time, and certain facilities in conducting experiments which under present circumstances I am compelled to leave in the hands of the proper authorities.

I have, &c.,
(Signed) CHARLES W. LANCASTER.

The President Committee
on Breech-loading Rifles.

APPENDIX VII.

LETTERS FROM MR. RIGBY.

24, Suffolk Street, Dublin,
SIR, 28th October 1868.

IN compliance with your notification of the 21st instant, I send to you the Henry rifle, to which I have fitted four barrels rifled on my system. I do not send any cartridges, as I am not prepared at present to submit a sample of ammunition; my experiments showing that even the best which I have heretofore tried is capable of improvement. In fact my most recent trials indicate plainly that the removal of the chief sources of inaccuracy in breech-loading rifles is quite attainable, and I desire to pursue these investigations further before I submit the results to public trial.

I am, &c.,
JOHN RIGBY.

The Secretary,
*Ordnance Select Committee.

24, Suffolk Street, Dublin,
SIR, 6th November 1868.

I HAVE been engaged since my return here in gathering up the result of my previous experiments, and have determined the most important points. I am now *most desirous* to submit ammunition for my barrels, and to withdraw mine of the 28th on this subject. If the committee can possibly give them a trial, I think it will be more satisfactory than that they should have incurred the expense of my barrels, &c., without obtaining any result.

Your reply by return of post will oblige, and meanwhile I will make preparations to send in the rifle and ammunition as soon as possible after receipt of your reply.

What I would desire would be a comparative simultaneous trial with the best shooting arm you have as yet got, and I am prepared to attend personally for that purpose.

I am, &c.,
(Signed) JOHN RIGBY.

The Secretary,
*Ordnance Select Committee.

24, Suffolk Street, Dublin,
SIR, 25th November 1868.

I HAVE this day received from my agent in London, a report of partial trial of barrels and ammunition sent in by me. The result is so different from that of previous ones made in Dublin, that I am certain that the ammunition sent in has been defective from want of time to prepare proper apparatus for making it. As I had not time to complete the experiment in progress, and the committee cannot further extend the time for testing the barrels, I desire that the incomplete trial may not be recorded, but that the matter may be permitted to rest on the basis of my letter of the 28th October.

I am, &c.,
(Signed) JOHN RIGBY.

The Secretary,
*Ordnance Select Committee.

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* By Ordnance Select Committee is meant the Committee on Breech-loading Rifles.

APPENDIX VIII.

PENETRATION TRIALS.

Detail of Shots.

Rifle.	Range, in Yards.	Elm Planks Half an Inch thick and One inch apart.
inch.		
Snider, ·577	30	Through 9, struck 10.
,,	,,	Through 7, cracked 8.
,,	,,	Through 9, struck 10.
,,	,,	Through 9, struck 10.
,,	,,	Through 9, struck 10.
,,	,,	Through 7, struck 8.
Snider, ·5	,,	Through 7.
,,	,,	Through 8, cracked 9
,,	,,	Through 8, struck 9.
,,	,,	Through 9, struck 10.
,,	,,	Through 8, struck 9.
,,	,,	Through 8, stuck in 9.
Henry ·45	,,	Through 13.
,,	,,	Through 15, cracked 16.
,,	,,	Through 17, struck 18.
,,	,,	Through 13, struck 14.
,,	,,	Through 14, stuck in 15.
,,	,,	Through 13, struck 14.

Rifle.	Range, in Yards.	Two Balks of Dry Fir, each Balk 3 Inches thick.
inch.		
Snider, ·577	50	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
Snider, ·5	,,	Through.
,,	,,	Through.
,,	,,	Through.

Rifle.	Range, in Yards.	Three Balks of Dry Fir, each Balk 3 Inches thick.
inch.		
Henry ·45	50	Through.
,,	100	Through.

Rifle.	Range, in Yards.	Three Balks of Dry Fir, One Balk of Green Fir, each Balk 3 Inches thick.
inch.		
Henry ·45	100	Through.
,,	,,	Through.
,,	,,	Proof.

Two balks of green oak were found proof against all.

Rifle.	Range in Yards.	One Gauge, No. 3, Iron Plate ·261 Inch thick.
inch.		
Snider, ·577	50	Through.
,,	75	Through.
,,	100	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
Snider, ·5	,,	Through.
Henry ·45	,,	Through.
Snider, ·5	150	Proof.
,,	,,	Proof.
Snider, ·577	200	Proof.
Snider, ·5	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Proof.
,,	,,	Through.
,,	300	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	350	Proof.
,,	,,	Proof.

Rifle.	Range in Yards.	Two Gauges, No. 11, 1½ Inch apart, Iron Plates, each ·125 Inch thick.
inch.		
Snider, ·577	300	Proof.
,,	,,	Proof.
Snider, ·5	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	,,	Through.
,,	,,	Through.
,,	400	Through, in pieces.
,,	,,	Proof, stuck in wood support.
,,	,,	Proof, stuck in wood support.
,,	,,	Proof, stuck in wood support.
,,	,,	Through.
,,	500	Proof, stuck in wood support.
,,	,,	Through.
,,	,,	Through.

Rifle.	Range in yards.	A Mantlet, 4 thicknesses of 3-inch rope.
inch.		
Snider ·577	50	Proof.
,,	,,	Proof.
,,	,,	Proof.
Snider ·5	,,	Proof.
,,	,,	Through.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	,,	Proof.
,,	,,	Through.
Snider ·5	100	Proof.
,,	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	,,	Proof.
,,	,,	Through in pieces.
,,	150	Through.
,,	,,	Proof.
,,	,,	Proof.
Snider ·5	200	Proof.
,,	,,	Through in pieces.

Rifle.	Range in Yards.	A Mantlet, 4 thicknesses of 3-inch rope.
inch.		
Snider ·5	200	Proof.
Henry ·45	,,	Proof.
,,	,,	Through.
,,	,,	Through.
Snider ·5	250	Proof.
,,	,,	Through in pieces.
,,	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	,,	Through.
,,	,,	Through.
,,	300	Through.
,,	,,	Through.
,,	,,	Through.
,,	350	Proof.
,,	,,	Proof.
,,	,,	Through.
,,	400	Proof.
,,	,,	Proof.
,,	,,	Proof.

Rifle.	Range in Yards.	An Ordinary Gabion.
inch.		
Snider ·577	10	Proof.
,,	,,	Proof.
,,	,,	Proof.
Snider ·5	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	,,	Proof.
,,	,,	Through.
,,	25	Through.
,,	,,	Proof.

Jones's Iron Gabion was found proof against all.

Rifle.	Range in Yards.	Sap-Roller.
inch.		
Snider ·577	10	Proof.
,,	,,	Proof.
,,	,,	Proof.
Snider ·5	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	*	Proof.
,,	*	Proof.
Snider ·577	25	Proof.
,,	,,	Proof.
,,	,,	Proof.
Snider ·5	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.
Henry ·45	,,	Through.
,,	,,	Through.
,,	,,	Proof.
,,	50	Proof.
,,	,,	Proof.
,,	,,	Proof.

* Fired from shoulder rest.

Rifle.	Range in Yards.	A Sand-bag, containing a bushel of sand, about 12 inches thick.
inch.		
Henry ·45	10	Proof.
,,	,,	Through centre.
,,	,,	Proof.
,,	25	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	50	Proof.
,,	,,	Proof.
,,	,,	Proof.
,,	100	Proof.
,,	,,	Proof.
,,	,,	Through.
,,	,,	Proof.
,,	,,	Proof.
,,	,,	Proof.

Rifle.	Range in Yards.	Description of wound on Horse.
inch.		
Henry ·45	200	Simple bullet wound, a punctured wound in shoulder, bullet went through.
,,	,,	Struck six inches lower than No. 1 shot, just to right of near shoulder blade, went clean through, making a very large lacerated wound on exit.
Snider ·577	,,	Struck thigh bone without breaking it, bored along soft tissue, bullet remained in.
Snider ·5	,,	Touched on the bone and the bullet did not go through, but lodged in the flesh high on the near hind quarter, and was cut out much flattened up.
Henry ·45	50	Broke thick part of bone of hind leg to pieces, the lower part of thigh bone of off hind leg, the bullet remained in, the bone was smashed to pieces.
Snider ·577	,,	Struck shin bone of near hind leg, a compound fracture, the ball passed through, not so bad a wound as No. 5.
Snider ·5	,,	Struck upper part of off fore leg, the bullet passed through, bone broken, not so bad a wound as either No. 5 or 6.
Henry ·45	,,	Struck near shoulder, smashed shoulder bone into so many pieces that it was like small shot, bullet cut out from skin of off shoulder, a piece of bone was carried through.
		Several other shots were fired with the Snider and passed through the fore legs without breaking the bone.

APPENDIX IX.

LETTER FROM VETERINARY SURGEON HARRISON, R.H.A.

Sir, Woolwich, 9th Nov., 1868.

In witnessing the firing upon a recently killed horse, on the 3d instant, I have the honour to state that the bullets on striking the bones produced very complete and severe fractures, breaking the bones into splinters; and, therefore, presuming the horse had been alive, entirely incapacitating him from any progressive motion.

The smaller bullets appeared to me to produce the most severe fractures, the larger ones more disposed to flatten and traverse the soft tissues adjoining the bones.

I have, &c.,
(Signed) Edwd. O. Harrison,
V. Surgeon, R.H.A.

The President of the Small Arms Committee.

APPENDIX X.

LETTER FROM SUPERINTENDENT OF ROYAL GUNPOWDER FACTORY.

Royal Gunpowder Factory,
Sir, Waltham Abbey, April 12, 1868.

In reply to your letter of the 2d instant, requesting a report upon the manufacture of a powder similar to Curtis and Harvey's No. 6, for the information of the Committee on breech-loading rifles, I beg to say that a powder very similar to the above could be made here by introducing the following changes in the manufacture of the service R. F. G. powder :

1. Charcoal burned at a lower temperature.
2. The charge taken off the mill bed in a moister condition.
3. Pressed to a higher density.
4. More highly glazed, and sifted to a more uniform size of grain.

The additional cost of such powder would probably not exceed five to six shillings over the present price of R. F. G.

If the Committee desire some powder of this kind for experiment, I will ask the authority of the Secretary of State to manufacture it.

The least quantity that could be produced will be two barrels. I may add, that as Curtis and Harvey's No. 6 powder has been found to give more uniform results than service R. F. G. I think this experiment very desirable.

I have, &c.,
C. W. Younghusband,
Col. R.A.

The Secretary Committee on Breech-loading Rifles.

APPENDIX XI.

Royal Small Arms Factory, Enfield,
2nd December 1868.

Estimate of the cost of supplying steel barrels in the Royal Small Arms Factory, in large quantities, and of uniform quality, of the following patterns :—

The estimate is taken upon 1,600 barrels per week as the number which will involve the department in the least amount of extra outlay for additional machinery, although the factory has produced 2,300 per week under pressure.

	£	s.	d.
Enfield pattern '53, ·577 inch bore, without back sight or action, - - of which 8½*d.* is paid for rifling.	0	15	5
8 Turning lathes @ 86*l.* each -	688	0	0
4 First boring machines @ 50*l.* each	200	0	0
The above would be required in addition to present machinery.			
Enfield ·5 inch bore, without back sight and action - - - - of which 1*s.* 1½*d.* would be paid for rifling.	0	18	9
Extra Machines, as before - -	888	0	0
13 Additional rifling machines @ 130*l.* each - - - -	1,690	0	0
Enfield ·45 inch bore, without back sight or action - - - - of which 1*s.* 3*d.* would be paid for rifling.	0	19	0
Extra machines, as before - -	888	0	0
17 Extra rifling machines @ 130*l.* each - - - - - -	2,210	0	0
Henry ·45 inch bore, without back sight or action - - - - - of which 2*s.* 0½*d.* would be paid for rifling.	0	19	9½
Extra machines, as before - -	888	0	0
40 Additional rifling machines @ 130*l.* each - - - - -	5,200	0	0

A separate building would be required for the large number of extra rifling machines.

Independently of the above expenditure, it would be necessary to expend about 240*l.* in altering 12 of the present number of rifling machines, in order to enable them to cut grooves with a quick pitch of 20 inches.

The great number of extra rifling machines required for the Henry barrel is owing to the extra time which this barrel will require for rifling ; it is estimated that only five per diem can be rifled in one machine, and, probably, from the great delicacy of this nature of rifling, this number might not be produced for some time.

(Signed) W. M. Dixon,
Col. and Superintendent.

APPENDIX XII.

Royal Small Arms Factory, Enfield,
14th December 1868.

Secretary Committee on Breech-loading Arms,

Mr. Henry came to this factory on the 9th instant, and the enclosed memorandum was made by my manager. I was away, and did not see Mr. Henry.

With reference to the memorandum, I should like for the committee to obtain for me, from Mr. Henry, the real pattern for his rifling, viz :—a piece of barrel showing the true form, depth, &c., of the grooves, and their number, also a standard cutter.

With respect to remark No. 7, it is impossible for me to view any work in a vague, undecided way, as suggested in this remark. The only toleration allowed

in the rifling, or in the bore of the arm, is in the sense of approaching as nearly as possible to the pattern, without expecting to be always absolutely correct.

Mr. Henry's barrels, as rifled in Birminghan, are not viewed, therefore it is very possible he may get them done cheaper and quicker than they would be done here. I can only accept the pattern and work as closely as possible to it.

As soon as I have received the real pattern of the rifling and the cutter, I shall then be in a position to re-consider my estimate of the cost of the operation as already furnished to the committee.

(Signed) W. M. Dixon,
Col. and Superintendent.

Memorandum of remarks made by Mr. Henry on his last visit to Enfield, December 9th, 1868, with respect to the rifling of his barrels :—

1. The piece of barrel and the cutter sent to Enfield does not represent Mr. Henry's views, and they were not submitted to the Ordnance Select Committee* as patterns from which an estimate could be made, but merely to show the form of rifling

2. The rifling should be septangular, one turn in 22 inches.

3. The bore not to exceed ·451 inch when finished.

4. A pattern, showing the exact form of rifling, will be supplied.

5. A standard cutter showing the degree of angle on each side of the hand ridge will be supplied.

6. The angles on the cutter should be equal.

7. There is no necessity for the view to be very strict, as a slight variation in the depth or form of the angles does not affect the shooting.

8. A man in Birmingham rifles these barrels at the rate of 20 per diem with one machine only, but the barrels are not viewed after being rifled.

APPENDIX XIII.

Sir, Edinburgh, 22d December 1868.

Referring to your letter $\frac{2.5.6.9}{3}$ of December 3rd in which you inform me you have enclosed copy of a letter from the superintendent R. S. A. Factory, Enfield, giving an estimate for rifling steel barrels of various calibres, and of different systems, and requesting me to forward to your Committee any remarks I might wish to offer on the subject, especially with reference to my own arm, and also desiring me to give an estimate of the cost of supplying 1,000 steel barrels rifled on my system, and a further estimate for 100,000 complete rifles, having my patent rifling and breech action, with the cost of rifling and rate per week they could be turned out, I have now the honour to inform you that after placing myself in communication with those best able to afford me accurate information on the subjects referred to I am enabled to report as follows :—

1st. From my own personal experience, and that of Mr. Allport, a Birmingham manufacturer, who has rifled a very large number of barrels on my system during the past eight years, it is clearly evident that the estimate furnished you by the superintendent R. S. A. Factory at Enfield, for the supply of barrels rifled on my system is based upon wrong premises.

In that estimate the cost of rifling a single barrel of ·577 calibre on the Enfield system is fixed at $8\frac{1}{2}d.$, for a barrel of ·500 calibre on the same system $1s.$ $1\frac{1}{2}d.$, for a barrel of ·450 on the same system $1s.$ $3d.$, whereas the cost of rifling a barrel of ·450 calibre on my system is shown to be $2s.$ $0\frac{1}{2}d.$

The letter annexed marked "A" is a copy of one received from Mr Allport, and he from his long experience estimates the cost of rifling a barrel on my system, over that of the ordinary Government Enfield of ·577 bore at $1d.$ only, and about 20 barrels could be rifled in one machine per day.

The letter annexed marked "B" is a copy of one received from the manager of the Birmingham Small Arms Company, and had no further statement been furnished it must have been sufficient evidence that the cost of rifling barrels on the Henry system only slightly exceeds those rifled on the Enfield system, but the manager of the company verbally stated to myself and Mr. Newby that the additional cost of rifling barrels of ·450 calibre on my system over that of the three-grooved long, or five-grooved short Enfield would not exceed $2d.$ per barrel, and about 18 barrels could be rifled in one machine per day of 10 hours.

Thus according to S. B. Allport's statement of 20 barrels rifled in one machine per day, it would require about 15 machines to rifle 1,600 barrels per week, and if, according to Enfield estimate ·577 gauge Enfield cost $8\frac{1}{2}d.$ per barrel to rifle, the Henry ·450 would cost $9\frac{1}{2}d.$

According to Small Arms Company's statement of 18 barrels rifled in one machine per day, it would require about 17 machines to rifle 1,600 barrels per week, and if, according to Enfield estimate ·577 gauge Enfield cost $8\frac{1}{2}$ per barrel to rifle, the Henry ·450 would cost $10\frac{1}{2}$.

Presuming only 15 barrels to be rifled per day in one machine at Enfield Factory, about 20 rifling machines would be required in all, to produce 1,600 barrels per week.

2nd. I can supply 1,000 best steel barrels of ·450 calibre, rifled on my system, with either seven or nine cuts, and without backsight or action, at $15s.$ each. If of foreign production a lower price can be quoted.

3rd. 100,000 rifles, with steel barrels of ·450 calibre, rifled on my system, and with my patent breech action, can be supplied of English manufacture at $50s.$ and upwards. If every part is to be submitted to Government gauge and view, the Birmingham Small Arms Company's quotation is $65s.$ each, and the rate of delivery 1,000 to 1,200 per week.

If cheapness is sought after, arms of foreign manufacture can be supplied at $45s.$ and upwards.

In accordance with the wishes of the Committee I went to Enfield on the 9th instant, but was unfortunately unable to see Colonel Dixon, who was engaged in town. I, however, had an interview with the manager and others connected with the rifling department, and entered fully into explanations of my system of rifling, showing the ease with which it is produced, and my explanations were apparently satisfactory. After a second visit to Birmingham, I again went to Enfield yesterday, and had a long interview with Colonel Dixon, and after fully discussing the various points in connexion with the production upon a large scale of rifle barrels on my system, I handed him the following specification, with which he expressed his satisfaction, and stated that the margin allowed would materially alter his original estimation.

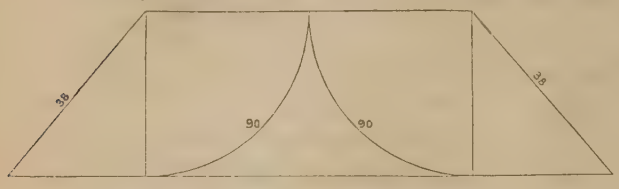
In small-bore breech-loading arms satisfactory results can be obtained with this system of rifling, varying in gauge from ·449 to ·451, using the same description of bullet (or ammunition) for both, ·450 being preferred as the standard gauge. Absolute perfection in the shape of the re-entering angles is not necessary, provided the concentricity with the planes be retained, nor would a slight error in respect of one angle differing from the rest, in a barrel rifled on this system, interfere perceptibly with the accuracy of its shooting. A seven cut with planes ·135 to ·138 in breadth, and the sides of the re-entering angles as

* By Ordnance Select Committee Mr. Henry evidently means the Committee on Breech-loading Rifles.

diagram below, will, with ·450 minor diameter, give ·465 major diameter.

In a nine cut rifle on the same principle, ·450 minor diameter, and ·462 major diameter, are found to give results very nearly equal.

As mathematical accuracy is not indispensable with this system of rifling, a reduction in the major diameter to the extent of three or four thousandths of an inch may be made without affecting the accuracy of the shooting, and this in the manufacture of large quantities is a very great consideration.



I left with Colonel Dixon specimens of rifled tubes, also sectional specimens, and the tool with which the 7-cwt. tube was rifled.

These were intended as a guide for the manufacture of the cutters.

I have, &c.
(Signed) ALEXR. HENRY.

The President Committee
on Breech-loading Rifles.

"A."

Gun and Pistol Manufactory,
50 Whittal Street, Birmingham,
7th December 1868.

Mr. A. Henry, Edinburgh.

DEAR SIR,

IN answer to your inquiry as to the relative cost of rifling barrels (whether of ·450 or ·577 calibre) on your system, or that of the ordinary service arm, the experience gained in the rifling of over two thousand barrels on your system enables me to judge that upon a large scale the rifling of barrels on the "Henry" system would not exceed that of the Government Enfield by more than *one penny* per barrel.

Respecting the difference in the cost of rifling a barrel with seven or nine cuts there is practically none whatever, for your principle requires the cut to be somewhat deeper in the seven than in the nine-grooved barrel, and this compensates for the extra number of cuts.

With regard to the facility of production, I would not, without the experience of larger quantities at one time, assert that I could cut more than 20 barrels in one machine per day of ten hours.

The cost of the barrels would entirely depend upon the quality required; and the same description being necessary for either system of rifling, this question can only be answered upon receiving a full specification.

I am &c.
(Signed) SAMUEL B. ALLPORT.

"B."

Small Arms Factory,
Smallheath, Birmingham,
December 7th, 1868.

DEAR SIR,

IN reply to your inquiry, I beg to inform you that in any large order for guns, say 50,000, I should not think of adding anything to the cost on account of your system of rifling, although it would be rather more expensive than the Enfield system of rifling.

I am &c.,
(Signed) B. MCKAY, MANAGER.

Alexander Henry, Esq.,
Stork Hotel, Birmingham.

APPENDIX XIV.

Royal Small Arms Factory, Enfield,
13th January 1869.

Secretary Committee on
Breech-loading Arms.

Subsequently to my report dated 2d December 1868 on the estimated cost of small-bore arms, as far as the rifling was concerned, I have by actual experiment been able to arrive at a closer approximation upon the subject of prices.

I have also been furnished by Mr. Henry with an exact description of his rifling, and as the form of groove, the twist, and depth have been now settled, I can make a considerable reduction in my former estimate of the cost of rifling his barrels.

Experiment has also proved that the ·5 and ·45 Enfield barrels can also be reduced in cost of rifling, or in other words, the machines can produce more work than I had calculated upon.

The revised estimate will therefore stand as follows:

Enfield ·5-inch bore.

Cost of barrel 18*s.* 5½*d.*, of which 10*d.* would be paid for rifling.

	£	*s.*	*d.*
Extra machines as before - -	888	0	0
Nine additional rifling machines @ -	130	0	0

Enfield ·45 inch bore.

Cost of barrel 18*s.* 7*d.*, of which 10*d.* would be paid for rifling.

	£	*s.*	*d.*
Extra machines as before - -	888	0	0
Eleven additional rifling machines @ -	130	0	0

Henry ·45 inch bore.

Cost of barrel 18*s.* 9*d.*, of which 1*s.* would be paid for rifling.

	£	*s.*	*d.*
Extra machines as before - -	888	0	0
Eleven additional rifling machines @ -	130	0	0

No building in this case would be required for the additional rifling machines.

The experiments were conducted on a ·45 inch barrel cutting seven of Mr. Henry's grooves.

In cutting nine grooves I find that less metal will have to be removed, but there will be two additional grooves.

It is probable that an equal number of barrels can be rifled with nine or with seven grooves.

The only question that I cannot quite speak with confidence upon, is on that of waste or indifferent work.

In cutting Mr. Henry's grooves there is a greater chance of waste than in the Enfield system. Considerable experience can alone determine whether the waste is excessive.

(Signed) W. M. DIXON,
Colonel and Superintendent.

13th January 1869.

APPENDIX XV.

TRIALS OF HENRY BARRELS FITTED TO MARTINI'S BREECH ACTIONS.

No. of Target.	No. of Rifle.	Range.	Wind.	Observed angle.	Trials.	Hits.	Misses.	Mean Deviation.	Corrected Angle.	Thermometer.	Hor. Dev. of M.I. from point aimed at.	Misfires.	Date.	Remarks.
				° ′				Feet.	° ′ ″	°	Feet.			
1	1. 7 grooves	300	N.E. Light	0 50	5	20	0	·70	0 37 7	45	3·44	0	18/1/69	Not cleaned.
2	,,	,,	,,	,,	0	,,	,,	·55	0 37 55	,,	3·68	,,	,,	,,
3	,,	,,	,,	,,	,,	,,	,,	·59	0 39 19	,,	3·49	,,	,,	,,
4	,,	,,	,,	,,	,,	,,	,,	·53	0 39 31	,,	3·87	,,	,,	,,
5	,,	,,	,,	,,	,,	,,	,,	·47	0 39 37	,,	3·73	,,	,,	,,
6	2. 9 grooves	,,	,,	,,	5	,,	,,	·49	0 43 24	,,	4·04	,,	,,	Cleaned.
7	,,	,,	,,	,,	1	,,	,,	·59	0 45 48	,,	1·10	,,	,,	,,
8	,,	,,	,,	,,	,,	,,	,,	·62	0 45 54	,,	1·22	,,	,,	,,
9	,,	,,	,,	,,	,,	19	,,	·55	0 46 48	,,	3·88	,,	,,	,,
10	,,	,,	,,	,,	,,	20	,,	·53	0 48 24	,,	3·64	,,	,,	,,
11	1. 7 grooves	500	S.E. Light	1 25	3	20	0	1·00	0 59 1	39	6·54	,,	13/1/69	,,
12	,,	,,	,,	,,	0	,,	,,	·79	1 0 31	,,	5·95	,,	,,	,,
13	,,	,,	,,	,,	,,	,,	,,	1·17	1 1 43	,,	5·29	,,	,,	,,
14	,,	,,	,,	,,	,,	,,	,,	·98	1 2 7	,,	5·19	,,	,,	,,
15	,,	,,	,,	,,	,,	,,	,,	·80	1 3 49	,,	5·83	,,	,,	,,
16	2. 9 grooves	,,	E. Light	1 40	4	,,	,,	·56	1 14 48	45	2·25	,,	12/1/69	Not cleaned.
17	,,	,,	,,	,,	0	,,	,,	1·01	1 17 42	,,	5·60	,,	,,	,,
18	,,	,,	,,	,,	,,	,,	,,	1·10	1 18 18	,,	5·30	,,	,,	,,
19	,,	,,	,,	,,	,,	,,	,,	1·23	1 18 12	,,	4·68	,,	,,	,,
20	,,	,,	,,	,,	,,	,,	,,	1·50	1 17 42	,,	4·57	,,	,,	,,
21	1. 7 grooves	800	S.E. Light	2 10	6	20	0	1·86	1 58 43	38	13·16	,,	14/1/69	,,
22	,,	,,	,,	,,	0	,,	,,	1·68	2 3 35	,,	12·46	,,	,,	,,
23	,,	,,	,,	,,	,,	,,	,,	1·73	2 3 55	,,	14·21	,,	,,	,,
24	,,	,,	,,	,,	,,	,,	,,	1·27	2 2 1	,,	14·20	,,	,,	,,
25	,,	,,	,,	,,	,,	,,	,,	1·63	2 3 13	,,	14·02	,,	,,	,,
26	2. 9 grooves	,,	,,	2 15	,,	,,	,,	1·57	2 7 42	,,	14·30	,,	,,	Cleaned.
27	,,	,,	,,	,,	,,	,,	,,	1·13	2 9 18	,,	13·60	,,	,,	,,
28	,,	,,	,,	,,	,,	,,	,,	1·36	2 9 48	,,	14·67	,,	,,	,,
29	,,	,,	,,	,,	,,	,,	,,	1·45	2 9 12	,,	13·15	,,	,,	,,
30	,,	,,	,,	,,	,,	,,	,,	1·83	2 8 30	,,	14·27	,,	,,	,,
31	1. 7 grooves	1,000	S.W. Strong	2 40	5	20	0	2·65	2 38 55	47	6·94	0	15/1/69	,,
32	,,	,,	,,	2 45	0	,,	,,	2·65	2 37 13	,,	5·93	,,	,,	,,
33	,,	,,	,,	,,	,,	,,	,,	2·19	2 38 25	,,	5·49	,,	,,	,,
34	,,	,,	,,	,,	,,	,,	,,	2·42	2 37 49	,,	3·92	,,	,,	,,
35	,,	,,	,,	,,	,,	,,	,,	4·11	2 39 49	,,	4·25	,,	,,	,,
36	2. 9 grooves	,,	,,	2 50	10	,,	,,	2·47	2 42 54	,,	0·87	,,	,,	Not cleaned.
37	,,	,,	,,	,,	0	,,	,,	2·73	2 40 24	,,	3·12	,,	,,	,,
38	,,	,,	,,	,,	,,	,,	,,	3·70	2 44 36	,,	1·91	,,	,,	,,
39	,,	,,	,,	,,	,,	,,	,,	4·53	2 47 54	,,	1·45	,,	,,	,,
40	,,	,,	,,	,,	,,	,,	,,	3·32	2 47 24	,,	1·41	,,	,,	,,
41	1. 7 grooves	1,200	S.E. Light	3 35	5	20	0	2·80	3 38 55	41	10·48	,,	19/1/69	Cleaned.
42	,,	,,	,,	,,	0	,,	,,	2·28	4 10 25	,,	12·99	,,	,,	,,
43	,,	,,	,,	3 37	,,	,,	,,	3·98	4 9 7	,,	11·81	,,	,,	,,
44	,,	,,	,,	,,	,,	19	1	3·76	3 51 49	,,	8·32	,,	,,	,,
45	,,	,,	,,	3 45	,,	19	1	4·48	3 57 37	,,	15·60	,,	,,	,,
46	2. 9 grooves	,,	,,	3 35	5	20	0	3·94	3 7 24	,,	12·97	,,	,,	Not cleaned.
47	,,	,,	,,	,,	0	18	2	4·22	3 55 12	,,	12·08	,,	,,	,,
48	,,	,,	,,	3 38	,,	19	1	5·40	3 21 6	,,	13·50	,,	,,	,,
49	,,	,,	,,	,,	,,	19	1	5·62	3 30 6	,,	13·61	,,	,,	,,
50	,,	,,	,,	,,	,,	16	4	6·31	3 44 18	,,	20·61	,,	,,	,,

APPENDIX XVI.

Chemical Department,
Royal Arsenal, Woolwich,
4th February 1869.

SIR,

IN reply to your communication of the 2nd instant, I have the honor to state for the information of the Committee on breech-loading small arms, that there is, in my opinion, no likelihood of the mechanism of the Martini breech-loading system being injuriously affected by the deposition of fouling upon it.

The fouling, or powder residue, being of a powerfully alkaline nature, will not exert any corrosive action upon the metal surfaces with which it comes in contact; alkaline substances are, indeed, applied to iron and steel surfaces, as protectives against oxidation.

The only circumstance under which the deposition of fouling might perhaps give rise to some injurious effect upon the mechanism, would be the keeping of the dirty arm *for some time* in damp localities.

I am, &c.,
(Signed) F. A. ABEL,
Chemist of the War Department.

Captain Rawlins,
&c., &c., &c.

APPENDIX XVII.

11,122 2/15.

Royal Laboratory, Woolwich, S.E.
January 11, 1869.

MEMORANDUM for Committee on Breech-loading Small Arms.

WITH reference to Captain Rawlins' letter of the 18th ultimo, Minute 339 25/3 6 9, I beg to state, that the comparative cost of manufacturing in large quantities the present service Boxer ammunition, and that which is being at present made up for the Henry ·45 inch bore, is as follows :—

	per 1,000 rounds.
Present ammunition - - -	£3 2 0
Henry ·45-inch - - - -	4 7 5

I would observe, however, that this last price is for ammunition made up with the special powder hitherto used in cartridges for the Henry rifle.

If we use the ordinary rifle F. G. powder, the cost would be reduced by about 11*s.* per 1,000 rounds.

The cost of bullets also is estimated for casting, instead of squirting the alloy into a rod, as we are not *certain* that a squirting apparatus could be obtained for forming the rod from the hard alloy of which the bullets are made.

Should we be able to form the alloy into rods, a considerable saving would be effected in the cost of the bullets.

(Signed) E. M. BOXER,
Supt. R.L.

APPENDIX XVIII.

Minute 26,139.

1641. STRENGTH of GUNPOWDER.
2367. PERFORATED and COMPRESSED POWDER.
2560. COMMITTEE on B. L. SMALL ARMS.

3

With reference to *Minute* 21,506. Secretary submits for record the following abstract prepared by Captain W. H. Noble, R.A., 14/8/68, giving the results of experiments (in continuation of those reported on *Minute* 21,506,) which he carried out for the Committee on B. L. Small Arms, to ascertain the strength and uniformity of various descriptions of perforated and compressed charges of gunpowder fired from the Henry B. L. small-bore rifle (0·45 inch) No. 3, the chamber of which had been lengthened, the front part having now a much shorter taper than formerly. Boxer cartridges were used throughout, with a solid bullet hardened.

The following were the descriptions of charges tried, all perforated with one bore in the centre :—

No. 1,—80 grains „ 2,—82 „ „ 3,—86 „	F. G. charge in one pellet, compressed in the original way ; *i. e.*, pressure applied at one end of the pellet, so that its densest portion is next the cap, and lightest portion next the bullet. The perforation being in the dense end, and the indentation in the light end.
„ 4,—80 „ „ 5,—82 „ „ 6,—86 „	F. G. charge in one pellet. Pressure reversed. Perforation original.
„ 7,—80 „ „ 8,—82 „ „ 9,—86 „	F. G. charge in two pellets, resting on one another, perforation in each in the end next cap, other extremity solid, without indent.
„ 10,—80 „ „ 11,—82 „ „ 12,—86 „	F. G. do do. when together 0·1 longer than Nos. 7, 8, 9.
„ 13,—80 „	F. G. charge in two pellets, compressed from both ends. Perforation original.
„ 14,—85 „	Curtis and Harvey No. 6, loose.
„ 15,—82 „ „ 16,—86 „	F. G. charge in one pellet, compressed from both ends. Perforation original.
„ 17,—86 „	F. G. charge in one pellet, compressed in original way.
„ 18,—86 „	Enfield rifle powder ; charge in one pellet. Compressed and perforated in original way.
„ 19,—86 „	Curtis and Harvey No. 6 ; charge in one pellet. Compressed and perforated in original way.

Nos. 1 to 14 were fired by alternate rounds. Nos. 15 to 19, separately in groups.

After a few trials it was found that the bullets of Nos. 4, 5, and 6 turned over almost immediately, and prevented any accuracy, they were therefore set aside without being tried further.

Nature of arm and date of experiment.	No. of rounds.	Charge and nature of powder.	Projectile mean weight.	Observed velocities at 82 feet.						Mean observed velocity.	Mean difference of velocity.	Calculated mean initial velocity.
Henry No. 3.		Grains.	Grains.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
5/6/68.	6	80 No. 1	468	1220·0	1251·3	1258·1	1264·0	1226·5	1240·7	1243·4	14·4	1285·4
„	6	82 No. 2	„	1255·1	1239·7	1259·0	1259·0	1259·0	1254·2	2254·5	5·1	1296·9
„	6	86 No. 3	„	Miss.	1278·9	1284·9	1280·9	1292·0	1294·1	1286·2	5·5	2331·2
„	6	80 No. 7	„	1186·3	1229·2	1216·2	1203·4	1239·7	1211·6	1214·4	13·9	1254·5
„	6	82 No. 8	„	1179·2	1216·2	1208·8	1216·2	1216·2	1210·7	1207·9	9·5	1247·5
„	6	86 No. 9	„	1182·4	1209·8	1212·5	1223·6	1237·8	1229·2	2216·4	13·8	2256·6
„	6	80 No. 10	„	1236·8	1254·2	1266·9	1257·0	1273·9	1261·0	1258·3	8·9	1301·3
„	6	82 No. 11	„	1272·3	1258·0	1269·8	1264·9	1278·8	1261·9	1267·6	6·0	1311·3
„	6	86 No. 12	„	1263·9	1248·3	1277·9	1256·1	1278·9	1263·9	1264·8	9·0	1308·3
„	6	80 No. 13	„	1263·9	1254·2	1252·2	1262·9	1252·2	1241·6	1254·3	5·7	1296·7
No. 1/5/6/68.	6	*85 No. 14	„	1294·1	1322·3	1312·8	1311·7	1320·1	1240·6	1316·9	10·7	1364·0
No. 3/8/6/68.	6	82 No. 15	„	1237·9	1239·9	1222·8	1222·8	1242·7	1246·6	1235·4	6·4	2276·9
„	6	86 No. 16	„	1268·1	1269·1	1273·1	1276·1	1287·2	1271·1	1274·1	6·0	1318·2
„	3	86 No. 17	„	1287·2	1289·2	1295·4	—	—	—	1290·6	3·2	1335·9
„	3	86 No. 18	„	1306·7	1319·3	1314·0	—	—	—	1313·3	4·4	1360·2
„	4	*86 No. 19	„	1314·1	1244·6	1267·1	1309·9	—	—	1283·9	28·0	1328·7

* Curtis and Harvey.

The results show :—

1. That on the whole, the original method of applying the pressure is the best
2. It is probable that rifle F. G. powder will give good results when pressed.
3. Curtis and Harvey, No. 6, when pressed gives bad results, showing that it is not suitable for making compressed charges.

Minute 24,298.

1321. Navez's Electro-ballistic Apparatus.
1641. Strength of Gunpowder.

Captain W. H. Noble, R.A., 18/2/68, submits for record the following results of an experiment carried out in conexion with the use of compressed charges in proof cartridges for Snider B. L. Enfield rifles.
The rounds were fired alternately from a service Snider Enfield.

Date of Experiment.	No. of Rounds.	Charge.	Cartridge.	Projectile. Nature and length.	Projectile. Mean weight and diameter.	Observed velocities at 27·3 yards.					Mean observed velocity.
		Grains.			Grains.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
14/8/67	5	137*	Boxer	Leaden bullet, hemispherical head. 1·08 inch.	720	1443·6	1448·5	1456·3	1438·6	1437·1	1444·8
					Ins.						
„	5	137†			0·567	1395·8	1395·8	1393·3	1406·6	1397·0	1397·7
„	3	147†				1439·8	1443·5	1447·2	—	—	1443·5
„	2	142†				1411·5	1417·4	—	—	—	1414·4
„	2	145†				1423·6	1422·3	—	—	—	1422·9

* Compressed. † Loose.

It appears from this that the compressed charge gives an increase of 50 feet velocity, and that it requires 147 grains of loose to equal 137 of compressed powder.

Minute 24,793.

1641. Strength of Gunpowder.
2367. Perforated and Compressed Gunpowder,—Proposed 19/9/62. *Minute* 7420.
2560. Committee on B. L. Small Arms.

3

Captain W. H. Noble, R.*A.*, 28/4/68, submits for record, with reference to *Minute* 24,037, the following abstract, giving the results of an experiment which he carried on for the Committee on B. L. Small Arms, to ascertain the strength and uniformity of perforated and compressed charges of gunpowder, in comparison with loose powder when fired from B. L. rifles.

The arm used was the Henry B. L. small-bore (0·450 inch) rifle, and the questions to determine were,—

1. What charge of compressed powder would give the same initial velocity as 85 grains of loose powder.
2. Whether the uniformity of the velocity was effected by the use of the compressed charge.

Nature of Arm and Date.	No. of Rounds.	Charge and Nature of Powder.	Observed velocities at 82 feet.					Mean observed velocity.	Mean difference of velocity.	Calculated mean initial velocity.	Remarks.
			Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	
Henry B. L. rifle No. 1. 16/4/68.	20	85 grs. loose Curtis and Harvey, No. 6.	1316·9	1312·7	1335·0	1327·5	1327·5	1321·2	8·44	1368·8	Clean arm.
			1316·9	1319·0	1330·7	1316·9	1314·8				
			1303·3	1309·5	1306·4	1336·1	1325·0				
			1320·0	1332·9	1325·4	1312·7	1325·4				
„	20	„	1344·7	1321·9	1320·8	1316·6	1362·2	1318·3	7·93	1365·9	Arm had fired 80 rounds.
			1299·9	1297·8	1316·6	1318·7	1319·7				
			1313·4	1311·3	1318·7	1325·1	1321·9				
			1313·4	1316·6	1317·6	1315·5	1303·0				
Henry B. L. rifle No. 3. 16/4/68.	20	80 grs. compressed F. G.	1239·7	1239·7	1237·9	1239·7	1258·1	1245·6	6·70	1287·9	Clean arm.
			1244·5	1235·9	1258·1	1236·9	1237·9				
			1238·8	1246·5	1249·3	1254·2	1251·3				
			1249·3	1254·2	1256·1	1244·5	1238·8				
„	19	„	1246·1	1252·9	1238·5	1238·5	1239·4	1249·9	7·58	1292·2	Arm had fired 80 rounds.
			1239·4	1264·6	1250·0	1252·9	1238·5				
			1257·7	1242·3	1257·7	1255·8	1244·2				
			1257·7	1261·7	1251·9	1257·7	—				
Henry B. L. rifle No. 1. 21/4/68.	18	85 grs. loose Curtis and Harvey, No. 6.	1303·2	1299·1	1310·5	1310·5	1292·9	1301·7	4·88	1347·9	Clean arm.
			1294·9	1301·1	1298·0	1306·3	1297·0				
			1294·9	1313·7	1301·1	1301·1	1303·2				
			1292·9	1305·3	1305·3	—	—				
Henry B. L. rifle No. 3. 21/4/68.	18	86 grs. compressed F. G.	1290·9	1294·9	1294·9	1296·0	1289·9	1291·5	3·31	1337·0	Clean arm.
			1292·9	1289·9	1291·0	1294·9	1292·9				
			1287·8	1284·8	1292·9	1294·9	1284·8				
			1284·8	1289·9	1299·1	—	—				

The results have proved that,—

(1.) 86 grains of compressed powder equal about 85 grains of loose powder.
(2.) There is considerable uniformity in velocity in the case of both powders, the compressed being slightly the best.
(3.) The fouling due to 80 rounds had no appreciable effect in either case on the strength or uniformity.

These results are very satisfactory for the compressed and perforated charges.

Boxer cartridges were used throughout, with a solid bullet hardened with $\frac{1}{13}$ of tin, of 466 grains weight. The rifles were fired alternately. The loose powder was "Curtis & Harvey, No. 6." The compressed charges were made, it is believed, of ordinary F. G. powder.

Minute 25,106.

1641. STRENGTH of GUNPOWDER.
2367. PERFORATED and COMPRESSED POWDER.
2560. COMMITTEE on B. L. SMALL ARMS.

3

Captain W. H. Noble, R.A., 6/6/68, submits for record, with reference to *Minute* 24,793, the following abstract giving the results of experiments, which he carried out for the Committee on B. L. small arms, to ascertain the strength and uniformity of perforated and compressed charges of gunpowder in comparison with loose powder when fired from B. L. rifles.

The arm used was the Henry B. L. small bore (0·45 inch) rifle.

The object of the experiment was,—

1. To compare with results on *Minute* 24,793, as subsequent investigation had showed that the compressed charges fired on that occasion were 80 and probably 86 grains, and not 75 and 81, as at first supposed.

2. To compare compressed charges of 80, 82, and 86 grains of F. G. powder with loose charges of 85 grains of Curtis & Harvey, No. 6.

Boxer cartridges were used throughout, with a solid bullet hardened with $\frac{1}{13}$th of tin. The rifles were fired alternately.

Nature of arm and date of experiment.	No. of rounds.	Charge and nature of powder.	Projectile. Mean weight.	Observed velocities at 82 feet.					Mean observed velocity.	Mean difference of velocity.	Calculated mean initial velocity.
			Grains.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
Henry B. L. rifle, No. 1, 21/5/68.	10	85 grs. loose C. & H., No. 6.	466	1302·6 1333·2	1328·9 1316·2	1291·3 1337·5	1324·6 1337·5	1333·2 1317·2	1322·2	12·32	1369·8
Henry B. L. rifle, No. 3, 21/5/68.	10	80 grs. compressed F. G.	466	1251·6 1261·4	1242·0 1249·7	1251·6 1261·4	1252·6 1276·2	1247·8 1250·7	1254·5	7·10	1296·9
Henry B. L. rifle, No. 1, 28/5/68.	10	85 grs. loose C. & H., No. 6.	480	1298·6 1311·1	1318·4 1321·6	1321·6 1320·5	1336·6 1321·6	1339·8 1326·9	1321·7	7·67	1368·0
„	10	Do.	466	1308·9 1331·2	1299·6 1329·0	1318·4 1318·4	1297·6 1325·8	1322·6 1324·8	1317·6	9·37	1365·2
Henry B. L. rifle, No. 3, 28/5/68.	10	80 grs. compressed F. G.	480	1245·0 1257·5	2263·4 1261·4	1268·3 1258·5	1248·8 1267·4	1257·5 1247·9	1257·6	6·23	1299·5
Do.	10	Do.	466	1269·3 1283·3	1242·1 1273·3	1283·3 1273·3	1267·4 1270·3	1263·4 1269·3	1269·5	7·24	1313·5
Do.	10	82 grs. compressed F. G.	480	1245·9 1266·4	1261·4 1265·4	1258·5 1263·4	1259·5 1255·6	1281·3 1277·3	1263·5	7·31	1305·5
Do.	10	86 grs. compressed F. G.	480	1308·9 1307·9	1303·8 1317·3	1308·9 1293·5	1303·8 1291·4	1290·4 1324·8	1305·1	8·49	1350·2

The results show,—

1. That 86 grains of compressed powder (F. G.) is equal to about 85 grains of loose Curtis & Harvey, No. 6.

2. There is considerable uniformity in the case of both powders, the compressed being the best.

3. With the 480 grain bullet the velocity is very slightly reduced by the extra weight. In fact, with the loose powder there was a higher velocity with the heavier bullet, showing that the increased resistance helped to burn the powder more effectually.

It is suggested that 1 lb. each of 10 different lots of F. G. powder be obtained from P. S. of Stores, and that 50 cartridges (86 grains) of each lot be made, and tested for uniformity.

Captain Noble wishes to point out, as stated in his evidence before the Committee on B. L. Small Arms (questions 1540—1550), that in comparing the velocity given by compressed and perforated charges with that given by loose charges, it is necessary to look to the previous manufacture of the two powders. That is to say, although a perforated and compressed charge of a certain description of powder, A, will give a higher velocity than the same charge of A in a loose state, it by no means follows that the A compressed will give an equal or superior velocity to a charge of B powder in a loose state.

In the present instance a charge of 86 grains of F. G. compressed would probably give a higher velocity than 86 grains F. G. loose, but it does not give as high a velocity as 85 grains of Curtis & Harvey, No. 6, loose. Still F. G. may have advantages for compressing which are not possessed by the other powder.

Minute 24,854.

1641. STRENGTH of GUNPOWDER.
2367. PERFORATED and COMPRESSED GUNPOWDER.
2560. COMMITTEE on B. L. SMALL ARMS.

3

Captain W. H. Noble, R.A., 5/5/68, submits for record, with reference to *Minute* 24,037, the following abstract giving the results of an experiment which he carried out for the Committee on B. L. small arms, to ascertain the strength and uniformity of perforated and compressed charges of gunpowder, in comparison with loose powder when fired from B. L. rifles.

The arm used was the small-bore rifle (0·5 inch) with Snider B. L. mechanism. *Minute* 24,730.

Boxer cartridges - - 440 grains.
Bullet, hollow, with expanding base.

See Minute 24,793 *for previous practice with compressed and perforated powder with Henry* B.L. *rifle.*

Nature of arm and date of experiment.	No. of rounds.	Charge and nature of powder.	Observed velocities at 82 feet.					Mean observed velocity.	Mean difference of velocity.	Calculated mean initial velocity.
		Grains.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
B. L. small-bore 0·5 inch No. 1, 30/4/68.	10	80 F. G. R. loose.	1306·7	1304·6	1315·1	1313·0	1319·3	1313·2	5·04	1374·7
			1319·3	1318·3	1304·6	1312·0	1319·3			
B. L. small-bore 0·5 inch No. 2, 30/4/68.	10	75 compressed.	1256·3	1256·3	1262·1	1248·2	1263·1	1258·9	2·76	1315·4
			1258·2	1262·1	1262·1	1256·3	1254·3			

RESULTS of trials made to test the accuracy of shooting with loose and compressed powder charges from the 0·5 inch Snider rifle, with a 440 grains hollow bullet with a clay plug in base, fired from fixed rest.

AVERAGE MEAN DEVIATION OF FIVE TARGETS OF 20 SHOTS EACH.

Distance.	Compressed F. G. Powder, 75 Grains.	Loose F. G. R. Powder, 80 Grains.
Yards.	Feet.	Feet.
500	1·25	1·32
„	1·00	0·87
800	2·99	2·42
„	2·89	2·69
1,000	5·41	7·06
„	4·44	4·72

RESULT of trials made to test the accuracy of shooting with compressed powder charges from the Henry ·45 inch rifle, with the Henry 480 grains bullet and 86 grains of compressed powder, F. G. R., fired from fixed rest.

AVERAGE MEAN DEVIATION OF FIVE TARGETS OF 20 SHOTS EACH.

No. of Rifle.	Distance.	Mean absolute deviation.	Remarks.
	Yards.	Feet.	
6	500	1·04	—
„	„	2·41	One miss.
„	„	1·85	—
„	„	2·17	One miss.
„	„	0·85	—
„	„	1·49	—
„	„	1·52	—
„	„	1·95	—
„	„	3·38	Two misses.
3	„	4·52	One miss.
„	„	3·55	One miss.

APPENDIX XIX.

Ordnance Select Committee, Royal Arsenal,
SIR, March 9, 1868.

THE Committee on breech-loading rifles are desirous of making experiments for determining the form and number of grooves and amount of twist most suitable for a military breech-loading rifle of 0·45 inch calibre.

The following elements have been chosen as the best on which to start the inquiry, viz. :—

Calibre		0·45 inch.
Barrel	Length	35 inches.
	Weight not to exceed	4 lbs. 6 ozs.
	Exterior diameter at breech	1·075 inch.
	Exterior diameter at muzzle	0·795 „
Bullet		480 grains.
Powder		85 „

or a quantity of compressed powder which will give equal initial velocity.

As this inquiry has no reference to the best method of closing the breech, it has been decided that all the barrels for trial shall be fitted to Henry breech arrangements, which are now being prepared.

The Committee being anxious to try your rifling in comparison with others, have directed me to inquire if you would favour them with your assistance in the necessary trials, by preparing eight steel barrels in accordance with the above conditions, and rifled in the manner which you consider best to ensure accurate shooting and freedom from fouling.

I am also to inquire upon what terms of repayment you would undertake to assist the Committee in the manner indicated.

From the evidence already received, and from their own experience, the Committee are inclined to prefer a bullet solid at the base, but they would not object to a slight concavity, also they have no objection to the bullet being hardened to any degree which may suit your rifling. The bullet may have cannelures or not; the lubrication must be pure beeswax, but the Committee will leave it to you whether it shall be applied directly to the bullet or on a paper cap, or in the form of a wad behind the bullet, or by any combination of these methods, or otherwise.

The bullets must be secured in the cartridge cases very firmly, and by a method that could be used when manufacturing in large quantities.

The cartridge cases will be made in the Royal Laboratory, and specimens can be supplied to you to govern the dimensions of the chamber, or a gauge

plug can be furnished for the chamber, which will allow for the manufacturing limits of dimensions of the cartridges.

The Committee propose that four of the barrels should be chambered for cartridges made up with ordinary powder, and four for compressed powder cartridges. The former could be completed at once, as the dimensions of the cartridge are well known. The dimensions of the cartridge for compressed powder are not yet determined, but the rifling of the barrels might be proceeded with, and the chambering completed hereafter. Time being of great importance, the Committee propose that all these barrels should be made to screw into one Henry breech arrangement with stock and lock, which will be supplied in the event of your being willing to afford your assistance.

The Committee would be glad to have your opinion as to whether, for these experimental purposes only, the barrels should be of steel or iron, and if the weight given, viz., 4 lbs. 6 ozs., could be reduced with safety.

In conclusion, I am to inquire whether any of the conditions laid down interfere with the development of your system of rifling, and if so, what alterations you would propose.

If you prefer it, the Committee will undertake that the barrels shall be delivered to you bored smooth to 0·45 inch calibre, but unrifled.

The Committee have no objection to the preparation of a larger number of barrels if you should require them for preliminary experiments, and would feel obliged by your including any such number in your estimate of cost, should you feel inclined to send one, and they would also wish for an estimate of the time which must elapse before the barrels can be completed and delivered.

A reply is requested at your earliest convenience.

I have, &c.

(Signed) R. W. Haig, Capt. R.A.,
Secretary.

9.3.68	J. Whitworth, Esq. Westley Richards, Esq. C. W. Lancaster, Esq. W. E. Metford, Esq. J. Rigby, Esq. A. Henry, Esq.
10.3.68	Colonel Dixon, R.A.
23.3.68	Colonel Boxer, R.A.

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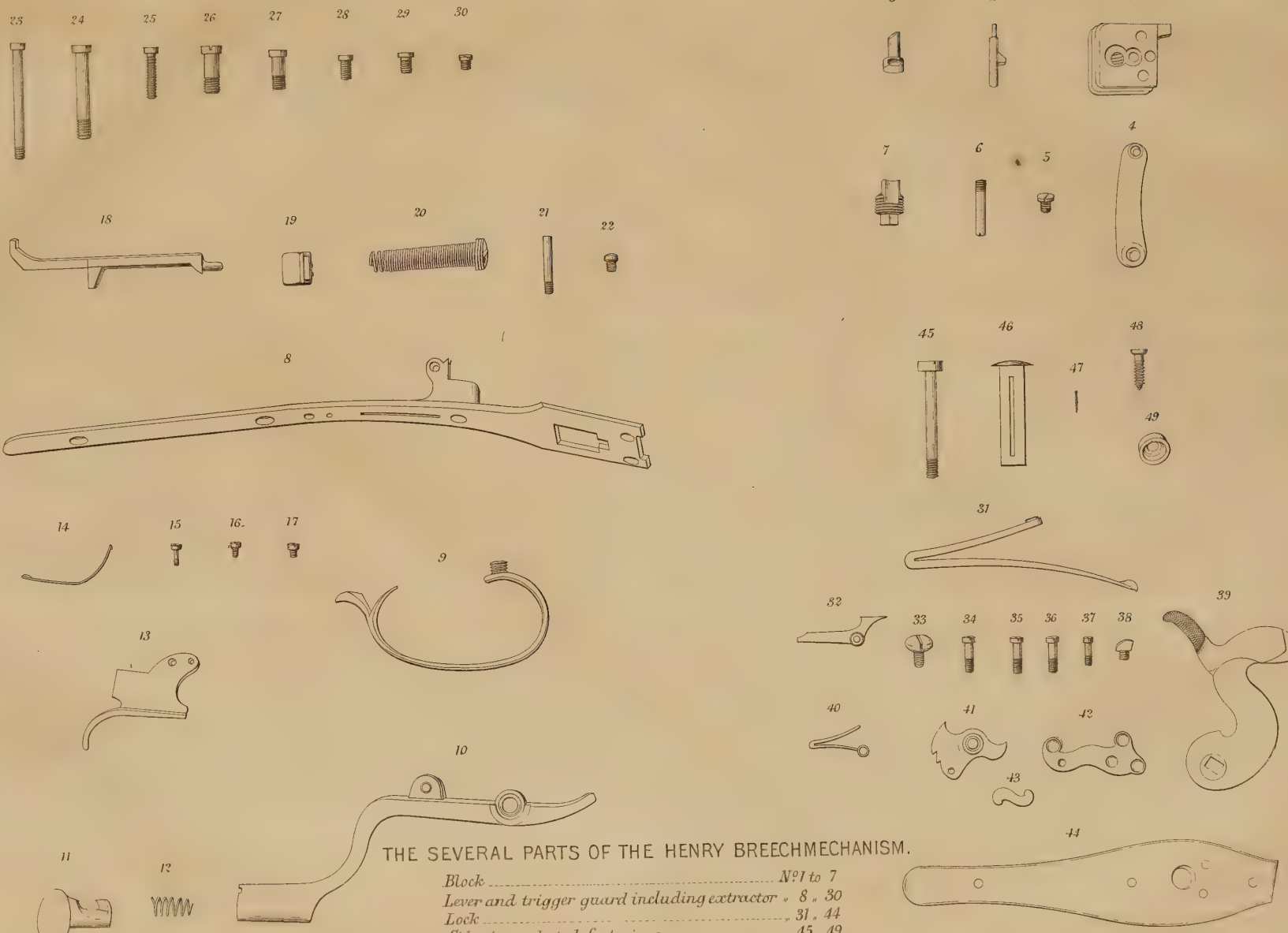


THE SEVERAL PARTS OF THE HENRY BREECHMECHANISM.

Block	*№1 to 7*
Lever and trigger guard including extractor	*„ 8 „ 30*
Lock	*„ 31 „ 44*
Side pins and stock fastenings	*„ 45 „ 49*

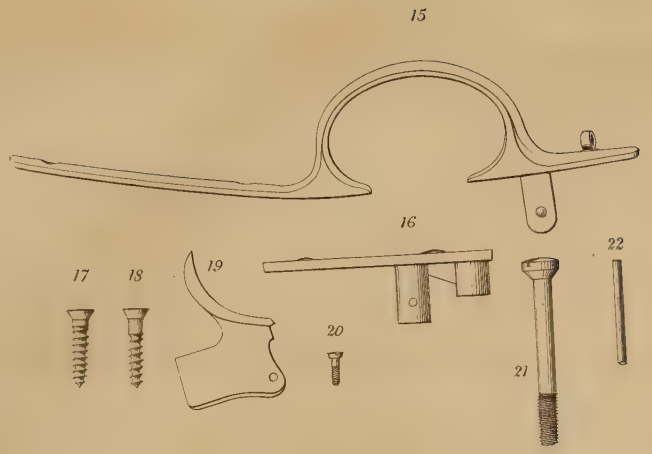
Plate I.

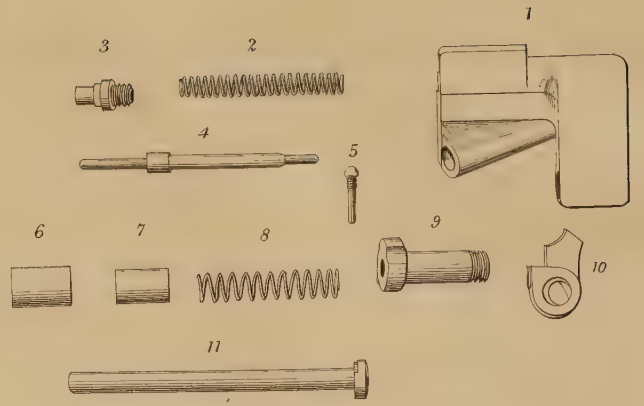
THE SEVERAL PARTS OF THE MARTINI BREECH MECHANISM.

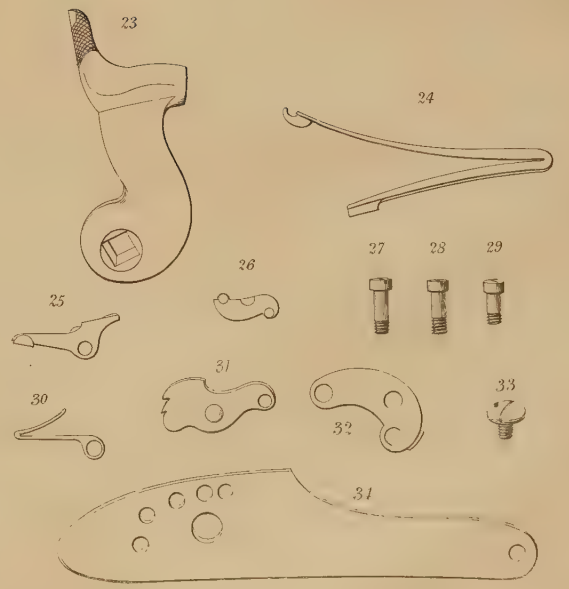
Block	*No. 1 to 6*	
Lever and trigger guard including extractor	*7 „ 18*	
Indicator	*19 „ 21*	*In the new pattern arm these three pieces have been dispensed with as the new indicator forms one piece with the tumbler pin.*
Safety bolt	*22 „ 24*	
Catch for lever	*25 „ 28*	
Stock fastenings	*29 „ 30*	

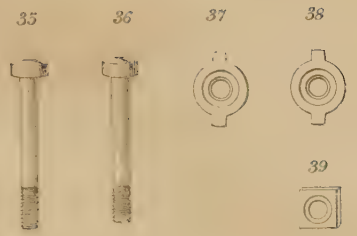
Plate II.

Vincent Brooks, Day & Son, Lith









THE SEVERAL PARTS OF THE SNIDER BREECHMECHANISM.

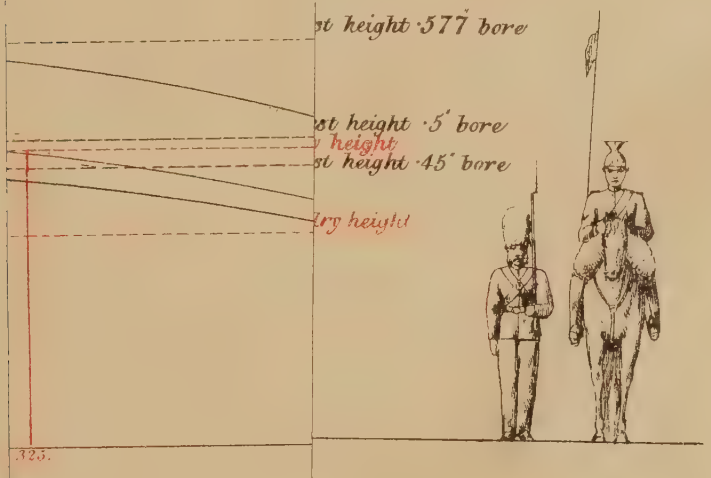
Block	*N°* 1 to 11
Fastenings for Block	12 „ 14
Trigger and Guard	15 „ 22
Lock	23 „ 34
Side pins and Stock fittings	35 „ 39

Plate III.

Vincent Brooks, Day & Son Lith.

Plate IV.

NRY ·45. BARR



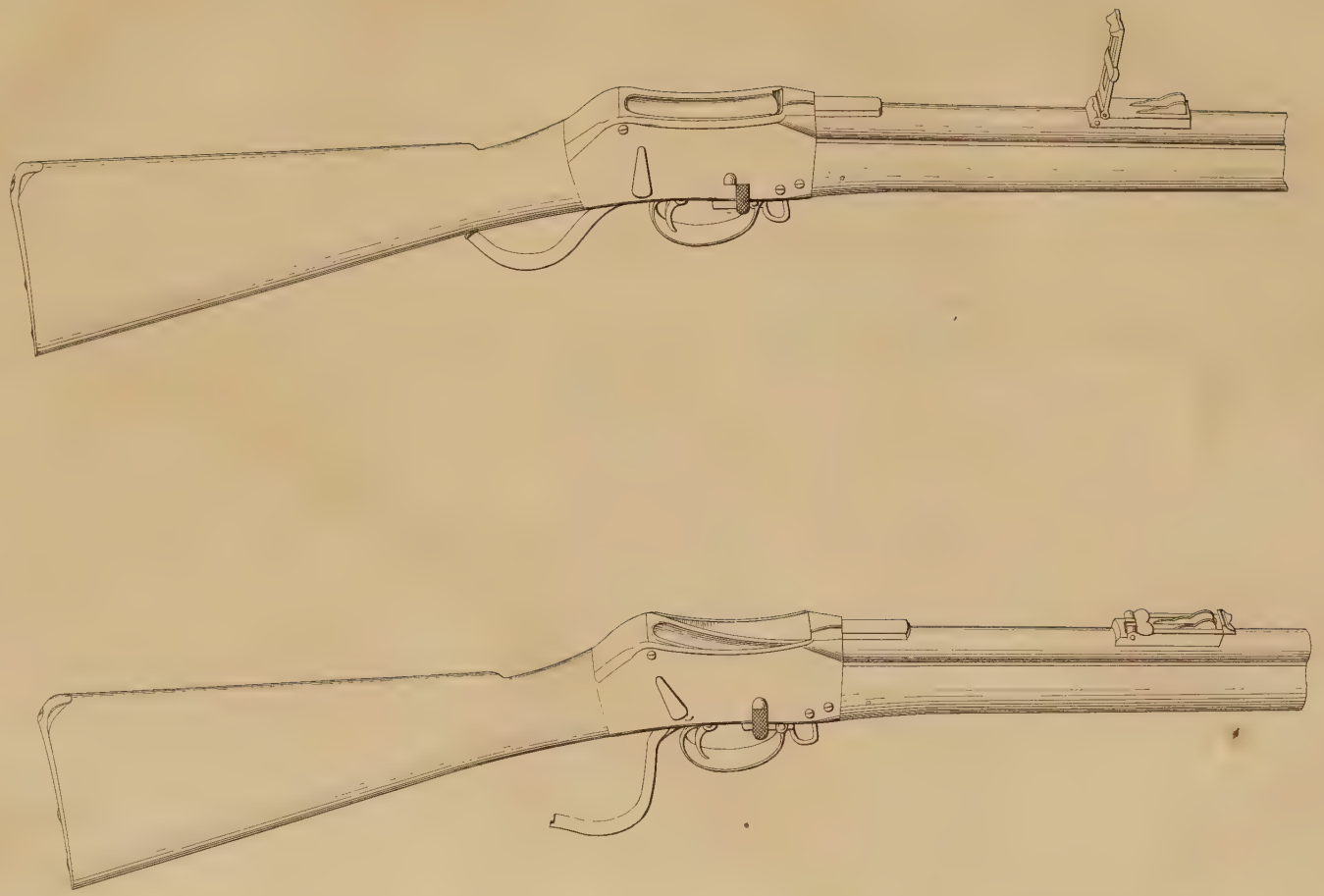
THE MAKLINI — [illegible]

Safe dist

Highest p

Vincent Brooks Day & Son Lith.

Vincent Brooks Day & Son Lith.



THE MARTINI — HENRY RIFLE.

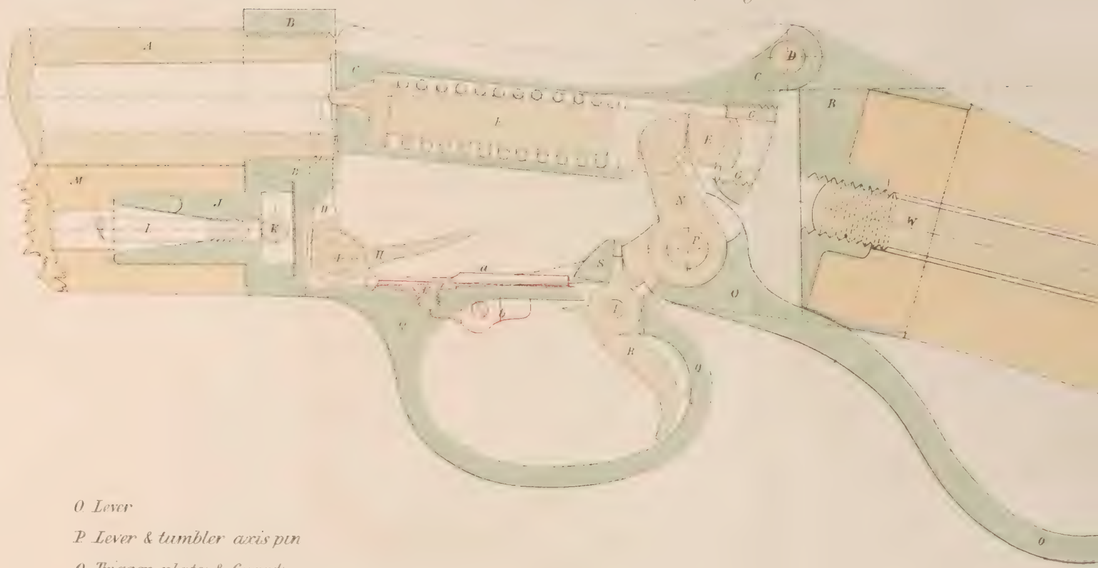
Plate V.

Vincent Brooks, Day & Son, Lith.

Sections and Names of Components. "Martini" Breech Action.

Section open with spring compressed.

Section closed with spring eased.



A A Barrel
B B Body
C C Block
D Block axis pin *
E Striker
F Main spring
G Stop nut
H Extractor
I Extractor axis-pin
J Rod & fore-end holder
K Rod & fore-end holder screw
L Ramrod
M Stock fore-end
N Tumbler
O Lever
P Lever & tumbler axis pin
Q Trigger plate & Guard
R Trigger
S Tumbler rest
T Trigger & rest axis-pin
U Trigger & rest spring
V Stock butt
W Stock bolt
X Stock bolt washer
Z Lever catch block spring & pin
a Locking bolt
b Thumbpiece

* *The pin as shewn in this drawing is placed slightly too low.*

COURTS-MARTIAL COMMISSION.

FIRST REPORT

OF

THE COMMISSIONERS

APPOINTED TO INQUIRE INTO

THE CONSTITUTION AND PRACTICE OF COURTS-MARTIAL IN THE ARMY,

AND

THE PRESENT SYSTEM OF PUNISHMENT FOR MILITARY OFFENCES.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1869.

[*Price* 1½*d.*]

40084
1

War Office,

SIR, 10th March 1868

I HAVE the honour to transmit to you Her Majesty's Commission appointing you and others therein named to be Her Majesty's Commissioners to inquire into the constitution and practice of Courts Martial in the Army, and the present system of punishment for military offences, and to report your opinions in what respects the administration of Criminal Justice in the Army admits of improvement.

I have the honour to be, Sir,
Your most obedient Servant,
JOHN S. PAKINGTON.

Colonel the Right Hon.
John Wilson Patten, M.P.,
&c. &c. &c.
24, Hill Street, Berkeley Square.

VICTORIA R.

Victoria, by the Grace of God of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith.

To Our right trusty and well-beloved Councillor John Wilson Patten, Esquire, Colonel of the Third Royal Lancashire Militia, one of Our Aides-de-Camp, Chancellor of Our Duchy of Lancaster.

To Our right trusty and well-beloved Councillor, Spencer Compton Cavendish, commonly called Marquis of Hartington.

To Our right trusty and well-beloved Cousin and Councillor Charles Viscount Eversley, Lieutenant-Colonel Commandant in the Hampshire Regiment of Yeomanry Cavalry, one of Our Aides-de-Camp, with the rank of Colonel in the Yeomanry.

To Our right trusty and well-beloved Councillor Lieutenant-General Jonathan Peel.

To Our right trusty and well-beloved Councillor John Robert Mowbray, Esquire, Judge Advocate-General of Our Forces.

To Our right trusty and well-beloved Councillor, Thomas Emerson Headlam, Esquire.

To Our right trusty and well-beloved Councillor Russell Gurney, Esquire, one of Our Counsel, learned in the Law, Recorder of Our City of London.

To Our trusty and well-beloved Sir James Yorke Scarlett, Knight Commander of the most honourable Order of the Bath, Lieutenant General of Our Forces.

To Our trusty and well-beloved Sir Alfred Hastings Horsford, Knight Commander of the most honourable Order of the Bath, Major-General of Our Forces.

To Our trusty and well-beloved Henry Eyre, Esquire, Lieutenant-General of Our Forces.

To Our trusty and well-beloved Samuel Whitbread, Esquire, greeting :

Whereas We have thought it expedient, for divers good causes and considerations, that a Commission should forthwith issue for the purpose of inquiring into the constitution and practice of Courts Martial in Our Army, and the present system of Punishment for Military Offences.

Now know ye, that We, reposing great trust and confidence in your zeal, discretion, and ability, have authorized and appointed, and do by these presents authorize and appoint you the said John Wilson Patten, Spencer Compton Cavendish (commonly called Marquess of Hartington), Charles Viscount Eversley, Jonathan Peel, John Robert Mowbray, Thomas Emerson Headlam, Russell Gurney, Sir James Yorke Scarlett, Sir Alfred Hastings Horsford, Henry Eyre, and Samuel Whitbread, or any three or more of you to be Our Commissioners for making the inquiry aforesaid. And We do hereby authorize and empower you Our said Commissioners, or any three or more of you, to obtain information thereupon by the examination of all persons most competent by reason of their knowledge, habits, or experience, to afford it; and also by calling for all documents, papers, and records which may appear to you, or any three or more of you, calculated to assist your researches, and to promote the formation of a sound judgment on the subject. And We do hereby require and command you, or any three or more of you, to report to Us, under your hands and seals, with all convenient speed, your opinions in what respects the administration of Criminal Justice in the Army admits of improvement, either as regards the constitution or the practice of Courts Martial, and what changes or modifications it may be desirable to make in the punishments now applicable to offences committed by the soldier without danger to the paramount consideration of maintaining discipline and effectually repressing crime in the ranks of the British Army throughout all the various contingencies of military service to which Our troops are necessarily liable. And We will and command, and by these presents ordain that this Our Commission shall continue in full force and virtue, and that you Our said Commissioners, or any three or more of you, may from time to time proceed in the execution thereof although the same be not continued from time to time by adjournment. And we do hereby command all and singular Our Justices of the Peace, Sheriffs, Mayors, Bailiffs, Constables, Officers, Ministers, and all other Our loving subjects whatsoever, as well within liberties as without, that they be assistant to you and each of you in the execution of these presents. And for your assistance in the due execution of these presents We have made choice of Our trusty and well-beloved John Lloyd Wharton, Esquire, barrister-at-law, to be Secretary to this Our Commission, and to attend you, whose service and assistance We require you to use from time to time as occasion shall require. In witness whereof We have caused these Our letters to be made patent.

Witness Ourself at the Court at Saint James's the tenth day of March in the thirty-first year of Our Reign.

By Her Majesty's Command.

JOHN S. PAKINGTON.

40084
3

War Office,
30th March 1868.

Sir,

In reference to my communication of the 10th instant, I have the honour to transmit to you Her Majesty's further Warrant, appointing the Honourable J. C. W. Vivian, M.P., and Colonel S. N. Lowder, C.B., Deputy Adjutant-General, Royal Marines, to be additional members of the Royal Commission on Courts Martial.

I have the honour to be, Sir,
Your most obedient servant,
JOHN S. PAKINGTON.

Colonel
The Right Honourable J. W. Patten, M.P.,
24, Hill Street, Berkeley Square.

Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, to

Our trusty and well beloved John Cranch Walker Vivian, Esquire, commonly called the Honourable John Cranch Walker Vivian;

Our trusty and well-beloved Samuel Netterville Lowder, Companion of the most honourable Order of the Bath, Colonel in Our Army, one of Our Aides-de-Camp, Deputy Adjutant General, Royal Marines, greeting,

Whereas We did, by Warrant under Our Royal Sign Manual, bearing date the Tenth instant, authorize and appoint Our right trusty and well-beloved Councillor John Wilson Patten, Esquire, Colonel of the Third Royal Lancashire Militia, one of Our Aides-de-Camp, Chancellor of Our Duchy of Lancaster, together with the several noblemen and gentlemen named in the said Warrant, or any three or more of them, to be Our Commissioners to inquire into the constitution and practice of Courts-Martial in Our Army, and the present system of Punishment for Military Offences.

Now know ye, that We, reposing great trust and confidence in your zeal, discretion, and ability, have authorized and appointed, and do by these presents authorize and appoint you, the said John Cranch Walker Vivian, commonly called the Honourable John Cranch Walker Vivian, and Samuel Netterville Lowder, to be Our Commissioners for the purposes aforesaid, in addition to, and together with, the Commissioners whom We have already appointed by the above-mentioned Royal Warrant.

Given at Our Court at Saint James's, this Thirtieth day of March One thousand eight hundred and sixty-eight, in the Thirty-first year of Our reign.

J. S. PAKINGTON.

To the Honourable John C. W. Vivian and Colonel S. N. Lowder, C.B., additional Commissioners for inquiring into the constitution and practice of Courts-Martial in Our Army, and the present system of Punishment for Military Offences.

FIRST REPORT.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

We Your Majesty's Commissioners, appointed by Warrant under Your Majesty's Sign Manual bearing date the 10th day of March 1868, to inquire into the constitution and practice of courts-martial and the present system of punishments for military offences, beg to submit to Your Majesty this our First Report.

Several voluminous documents relating to courts-martial have been laid before us at so late a period that we ask permission to delay for a short time our final Report; but inasmuch as some of our suggestions respecting military punishments, if approved of by Your Majesty, should in our opinion be acted upon without loss of time, we venture to submit them forthwith.

The abolition of flogging in the army by a recent Act of the legislature renders it all the more important that the remaining punishments in use in the service should at this time receive careful attention.

Passing over the consideration of the punishment of death, one happily of extremely rare occurrence in Your Majesty's service, the punishment next in order of severity is that of Penal Servitude.

The arrangements for carrying out a sentence of Penal Servitude are under the superintendence of a Board of Directors specially appointed for that purpose, and the only suggestion we have to make in connexion with it is, that as the shortest period of penal servitude to which a man can be sentenced is now five years, recourse should be had to this punishment for those serious crimes only which also involve dismissal from the army.

We are of opinion that it cannot in any case be desirable to retain in Your Majesty's service a man who has undergone such a term of penal servitude.

Next in order of severity comes imprisonment, either in military or civil prisons, for terms varying in extent but not exceeding two years, and as this is the most severe punishment which can be inflicted upon soldiers who are to be retained in the service, we have felt it right to examine into the arrangements which exist for carrying it into effect.

In order to institute an exact comparison between the systems of imprisonment as carried out in the military and civil prisons respectively, we inspected first a well conducted civil prison, and afterwards we visited some of the military prisons.

We are strongly of opinion that imprisonment as carried out in the military prisons is not nearly so severe as in the civil prisons, whilst in some of the former it is much more injurious in its moral effects upon many who are not hardened offenders.

One of the causes of this difference is to be found in the structural arrangements of the two classes of prisons. In the civil prisons the system is one of strict separation of prisoners; in some of the military prisons, on the contrary, the prisoners are associated.

In the civil prison which we inspected a separate cell is provided for every prisoner, in which he works, has his meals, and sleeps, and when he leaves this cell for exercise in the open air it is so arranged that he cannot hold communication with his fellow prisoners. Moreover, as required by the Prison Discipline Act of 1865, a daily task of real hard labour is enforced upon every able-bodied prisoner who is sentenced to that punishment.

In the Fort Clarence military prison there are only 21 cells, whilst the complement of prisoners is 106; most of the prisoners sleep in dormitories each containing several beds, no warder is in the rooms, and it is impossible therefore to place any effectual check upon communication between the prisoners at night.

The only form of hard labour in use is the "shot drill," at which the prisoners work in association for two periods of $1\frac{1}{2}$ hour daily; it is to be observed that this form of punishment is entirely unremunerative, it does not admit of being graduated according to a prisoner's strength, and many of the prisoners are altogether exempted from it.

The remaining punishment is principally a light form of oakum picking, carried on also in association.

The prisoners also have their meals in association, where again it is hardly possible to prevent communication between them.

It needs no argument to show how injurious to many prisoners must be this system of association, nor how much it detracts from the severity of the punishment.

The advantages attending the strict separation of prisoners are well ascertained, and universally admitted, and after long experience and careful inquiry the system has been applied by the legislature to all the civil prisons in England.

We came without hesitation to the conclusion that the severity of the punishment in military prisons is not to be compared with that in the civil gaol which we inspected.

Many of these remarks apply with equal force to the prison at Aldershot, which as a prison structure is even worse than Fort Clarence, and although in the military prison in Southwark, formerly known as the Queen's Bench Prison, there is a separate cell for each prisoner, the only form of hard labour in use is the shot drill, from which a large proportion of the prisoners are exempt, and there are no means of enforcing a task of hard labour in the cell. Moreover the cells appeared to be so constructed as to afford the maximum of inconvenience as regards effective superintendence and the minimum of punishment.

In making these remarks we feel it our duty to say that we do not impute the slightest blame to the officers of these military prisons. They seemed to us to be doing their best with the means at their disposal and under the regulations laid down for their guidance.

We have not had an opportunity of inspecting other military prisons, but we beg to call attention to the official reports of the Inspector-General of Military Prisons, in which also a confirmation will be found of nearly all that we have said of these prisons.

We consider that this condition of the military prisons calls for a prompt and decided change.

We recommend that a central military prison should be established sufficiently large to contain the prisoners from all districts within a convenient distance, that this prison should be constructed for, and worked upon the separate system as established by law for the civil prisons, and that the regulations as to "hard labour" laid down in the Prison Discipline Act, 1865, should be enforced.

We think that the object to be attained will amply justify the expenditure on this head, and we may observe that some considerable saving could be effected in the reduction of the staff of prison officers.

We are also of opinion that it would be advantageous that the military prisons should be placed directly under the superintendence of the Board of Directors of Government Prisons. The chairman of this board is at present the Inspector-General of Military Prisons.

Such a course would secure uniformity of discipline and treatment in all military prisons, and would bring to bear upon their management the wide experience of those whose whole time is given up to the administration of prison affairs. But as a considerable time would necessarily elapse before such a central prison could be established, and in order to provide a remedy where it is most urgently required, we recommend that those military prisons where there is not separate cell accommodation for the prisoners, should be closed so soon as the Govenment can enter into contracts with the authorities of any well regulated civil prisons for the reception of the requisite number of military prisoners, due regard being had to the situation of such civil prison.

In the remaining military prisons we recommend that the regulations as to separation and hard labour contained in the Prison Discipline Act, 1865, should as far as practicable be applied.

When our recommendation shall be completely carried out, it will follow that the term "solitary confinement" need no longer form part of any sentence, as every prisoner will be kept in strict separation, which is practically the only form of solitary confinement known in the prisons of this country, except for prison offences.

We think that confinement in dark cells should be kept as a punishment for offences committed in prison.

Instead of sending a military escort to convey the soldier to prison, a warder should be sent to convey him, in plain clothes.

We would also suggest that as a rule hard labour should form a part of the sentence of every soldier sent to a military prison. If the prisoner is not physically fit to undergo hard labour it can hardly be desirable to retain him in the army, and whenever recourse is had to the punishment of imprisonment it should be made as severe and deterrent as a due regard for the health of the prisoner and the laws of humanity will permit.

Punishments for Drunkenness.

All punishments hitherto in force for repressing drunkenness have proved ineffectual for their object.

We do not assert that drunkenness is on the increase in the army, but it still forms a lamentable and disgraceful blot in the military character, and is connected with a vast majority of crimes subjected to trial by court-martial.

If this crime could be eradicated or even materially checked, it cannot be doubted that the benefit would be felt not only in the improved discipline and efficiency of the army, but in the increased vigour, the comfort, and happiness of the troops.

As one amongst many illustrations of its prevalence and of its effects, we would call attention to a report which will be given in the appendix to our final report, as to the drunkenness which was punished in a garrison of 4,676 men quartered at Malta, in the space of one year, from which it appears that there were 458 trials for habitual drunkenness unaccompanied by any other offence, and that the total number of days lost to the service by imprisonment for drunkenness under sentence of court-martial in the same period of time was 16,099. We may also add that it is shown by the above report that the number of trials for habitual drunkenness in the whole army for the year 1866 was 9,736.

We observe from a correspondence which has been laid before us, and which will be also given in the appendix, that this subject has already attracted the attention of His Royal Highness the Commander-in-Chief, that it has been submitted by His Royal Highness to a Committee of officers, and that after collecting the opinions of several high authorities this committee has recommended a complete alteration in the punishment of this crime.

We also have made the punishment for drunkenness one of the main objects of our inquiry. We have taken the evidence of men of all ranks, officers, non-commissioned officers, and privates, and we believe that the opinion is almost unanimous, first, as to the inefficacy of the present system for the repression of this crime; and, secondly, as to the nature of the punishment which should be substituted, at least by way of experiment, for that now in force.

We agree with the committee appointed by His Royal Highness that these constant trials and frequent imprisonments have not only been ineffectual for repressing drunkenness, but that they tend to demoralize the men who are subjected to them, have a natural tendency to diminish that dread of prison which is so essential to the maintenance of discipline, while a large per-centage of the services of the army is hereby lost, and increased duty thrown upon well behaved men; and we concur in the alteration of Articles 76, 77, and 78, as set forth in that report.

It will be observed that a punishment by fine has been added by these amended articles, and that the trial for habitual drunkenness for the fourth time is retained only until it is ascertained whether the amended system is working satisfactorily.

That committee consider it essential to the success of any system of fines that the sums derived from them should be formed into a separate fund, and with the concurrence of the Secretary of State for War should be applied towards increasing the amount voted for rewards to well conducted men, or to other objects for the general improvement of the soldiers' condition. We concur with the committee in this view, and we believe that such an application of fines would tend very materially to secure the general concurrence of the army in the alteration. We may add, in support of this view, that it is simply the enforcement in the army of a provision of the civil law under which every one of Your Majesty's subjects is already liable to be fined for the offence of drunkenness.

Punishment of Non-commissioned Officers.

It is generally understood that under the provisions of the present Mutiny Act, and the usages of the army, no non-commissioned officer can be subjected to any punishment by court-martial without being reduced to the ranks, and this view has almost invariably been acted upon. The object of such a practice has been to maintain that respect on the part of the soldier for the non-commissioned officer which is so essential for the maintenance of discipline, and which would be materially decreased by a knowledge that the non-commissioned officer had himself been subjected to punishment for crime.

There is no doubt that the reduction of a non-commissioned officer to the ranks involves a much greater amount of punishment than can be inflicted for equal crimes on any other rank. It includes the loss of some of his advantages derived from previous good conduct, and renders it impossible for him to gain his gratuity and medal on discharge.

We may add that in the regulations of foreign armies, and especially in that of Prussia where more than ordinary importance is attached to the character and influence of non-commissioned officers, there is a scale of punishment which applies to them.

It will be seen by the evidence that non-commissioned officers consider this a serious grievance, and several officers of great experience are of opinion that the rule may be to a certain degree relaxed without prejudice to the service.

Without at all under estimating the very great importance of maintaining the high character at present enjoyed by the non-commissioned officers of Your Majesty's Forces, and the danger of diminishing the influence which that character gives them, we believe that some alteration in the application of the present regulations may be adopted with advantage, and we recommend that in cases where a non-commissioned officer has been reduced to the ranks, and subsequently restored, he should be enabled to regain any former distinction he possessed by good service, the length of which should be determined by regulation.

We cannot conclude our Report on Military Punishments without expressing our opinion that greater facility should be given for the discharge of soldiers who, from repeated convictions, afford grounds for believing that they are beyond the power of reformation.

The evidence given before us is conclusive that the continuance of such men in Your Majesty's service tends to demoralize the young soldier, and is otherwise seriously prejudicial to it.

Their discharge should be invariably preceded by severe punishment, and care taken that they have not the means of re-entering the service.

J. WILSON PATTEN.
HARTINGTON.
EVERSLEY.
J. PEEL, Lt.-General.
J. R. MOWBRAY.
T. E. HEADLAM.
RUSSELL GURNEY.
JAMES YORKE SCARLETT, Lt.-General.
HENRY EYRE, Lt.-General.
A. H. HORSFORD, Maj.-General.
J. C. VIVIAN.
S. NETTERVILLE LOWDER, Colonel, and Dep. Adj.-General, Royal Marines.
SAM. WHITBREAD.

JOHN LLOYD WHARTON,
Secretary.

July 24, 1868.

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

COURTS-MARTIAL COMMISSION.

SECOND REPORT

OF

THE COMMISSIONERS

APPOINTED TO INQUIRE INTO

THE CONSTITUTION AND PRACTICE OF COURTS-MARTIAL IN THE ARMY,

AND

THE PRESENT SYSTEM OF PUNISHMENT FOR MILITARY OFFENCES;

TOGETHER WITH

THE MINUTES OF EVIDENCE

AND APPENDIX.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1869.

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SECOND REPORT.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

Your Majesty's Commissioners appointed to inquire into the constitution and practice of Courts-Martial and the present system of military punishments, submit to Your Majesty their Second Report, having more especial reference to Courts-Martial.

The necessity for some exceptional tribunal better adapted to the exigencies of military service than the civil courts appears to have been recognised from very ancient times, in all nations, and under all forms of government.

In Your Majesty's dominions, as in France and other European nations, and in the United States of America, they form a portion of the national law equally with the civil courts: indeed, it may be said that the Mutiny Act, is by the very limited terms of its duration and frequency of its renewal, more truly and immediately framed by the people than any other of the existing statutes of the realm.

An American writer, whose work has been furnished to us by the Government of the United States, in treating of the necessity of courts-martial in that country, where they are regulated, as in Great Britain, by Articles of War and by general regulations and the orders of the President, describes them as tribunals existing by the same authority as any other courts, and the law military, as administered by them, as being as valid as any other law.

We have pleasure in adding the expression of our belief, founded on the evidence of men of all ranks in Your Majesty's forces, that although there may be defects requiring correction, to which we shall hereafter advert, these Courts have the confidence of the army, and they are satisfactorily spoken of even by those who have been subject to their jurisdiction.

It may be desirable in the first instance to give a short description of these Courts.

There are several kinds of courts-martial varying to some extent in their constitution and practice, according to the nature of the crimes with which they have to deal, and to the local and other circumstances under which they may be called upon to act.

For our present purpose it is necessary to specify only the three principal courts, the General, the District, and the Regimental.

A general court-martial consisted, up to the year 1868, of 13 commissioned officers if held in the United Kingdom or the British Isles, and seven or five, according to the locality, if held elsewhere. The Mutiny Act of 1868 reduced the number of officers in the United Kingdom or the British Isles to nine, each of whom must be of at least three years' standing.

A general court is convened under your Majesty's authority by the General Commanding-in-Chief, or by a General Officer in command at home or abroad empowered by warrant under sign manual. The president of it is appointed by the convening officer, but to secure impartiality the other officers of the court are called upon to serve, not by selection, but by roster from various regiments. It has the same power to try crimes, however grave, which is possessed by Your Majesty's ordinary criminal courts, and with the exception of corporal punishment, can award sentences equally severe, including that of death.

Every general court is attended by a Deputy Judge Advocate, appointed by deputation, if in England, from the Judge Advocate-General; if abroad, by warrant from the convening officer.

The Deputy Judge Advocate is not a member of the court, but acts as its legal adviser in all matters which come before it; and his duties, which up to a very recent period were of a rather undefined character, are now strictly laid down in Your Majesty's Regulations, and consist chiefly in securing a strict administration of military law as regards the court, and maintaining for the prisoner every privilege which the law allows him in the conduct of the trial. One of his duties, under the new regulations, is that of summing up the evidence.

In every case which comes before a general court a prosecutor is appointed by the convening officer, whose duties are defined in Your Majesty's Regulations.

Procedure of trial in this court resembles in some respects a trial before one of Your Majesty's ordinary tribunals. There are, however, some essential differences.

(1.) Questions to witnesses, whether by the prosecutor or the prisoner, are usually reduced to writing and submitted to the president, who, if they are sanctioned by the Deputy Judge Advocate, puts them, or causes them to be put by the latter, to the witness.

(2.) The questions and answers and all the proceedings of the court are recorded by the Deputy Judge Advocate.

(3.) Legal assistance is permitted to either prosecutor or prisoner, but no civilian is allowed to address the court. The prosecuting officer and the prisoner may, however, address the court; and in the more important cases these addresses are usually written.

(4.) The summing up and statement of the law are made by the Deputy Judge Advocate, and usually in writing.

(5.) The court itself gives its decision in every case, without reference to a jury.

(6.) The court does not immediately disclose the finding or sentence. In Great Britain and certain commands abroad a record of the proceedings is transmitted to the Judge Advocate-General, who submits it for Your Majesty's consideration and decision thereupon. In other commands abroad the proceedings are transmitted to the General Officer, who is empowered by warrant to confirm the same.

(7.) The confirming authority may approve and confirm the proceedings; he may remit the whole or any part of the sentence; may, in some special cases provided for by the Mutiny Act, commute the sentence; may decline to confirm the proceedings, and may order the court to re-assemble to re-consider their proceedings, and revise their decision. Such re-assembling can, however, only take place once, and additional evidence is in no case allowed to be given. No proceedings are valid until they are confirmed; when confirmed, they are promulgated and the sentence is carried into effect.

A district court-martial differs from a general one in the number and standing of its members, in not being attended by a Deputy Judge Advocate, and in having no power to try a commissioned officer or to pass a sentence of death or of penal servitude. The number of officers required to constitute a district court is seven. It is convened by the general commanding a district, or, under his authority, by any officer of sufficient rank.

A regimental court is convened by the commanding officer of a regiment exclusively for the trial of crimes committed within the regiment. It consists of five officers, unless it is found impracticable to assemble that number, when three shall be sufficient. With a view of strengthening the court, it is provided by the regulations that officers on their entrance into the army should attend the proceedings of all courts-martial that may be held at the station where they are quartered for at least six months from the date of their joining.

All the proceedings are conducted by the court itself, without the assistance of a prosecutor or a Deputy Judge Advocate.

There is another court termed a Court of Inquiry, which, however, cannot in any way be considered as a judicial body. It is employed at the discretion of a commanding officer, whether of a district or regiment, to collect and record information, or to give an opinion upon a proposed question. It has no power to administer an oath, or to compel the attendance of witnesses, and may be considered in the light of a council to the commanding officer, with a view of enabling him the better to discharge his duty to Your Majesty, and to facilitate to Your Majesty the exercise of your Prerogative in matters relating to the army. It is sometimes used by a commanding officer to ascertain whether there are grounds for submitting a case to a court-martial; and it is only in this last respect, if at all, that it can come within the scope of our inquiry.

The law of courts-martial is derived from the Mutiny Act, the Articles of War, and Your Majesty's Regulations; and when they are silent, by the custom of war, by which expression must be understood the customs of the British Army.

The Articles of War are framed by Your Majesty's authority, and are sanctioned by the Legislature under the Mutiny Act. The Regulations of the army are issued also by Your Majesty's authority; and the law so constituted is administered under an oath taken by all the members of the court, of which the following is an extract:—

"You shall duly administer justice according to the rules and articles for the better "government of Her Majesty's forces, and according to an Act now in force for the "punishment of mutiny and desertion and other crimes therein mentioned, without par- "tiality, favour, or affection; and if any doubt shall arise which is not explained by the

" said Articles or Act, then according to your conscience, the best of your under-
" standing, and the custom of war in like cases."

The number of courts-martial held in three years were:—

——	1865.	1866.	1867.
General - - -	155	20	103
District - - -	7,020	7,016	6,651
Regimental - - -	14,437	16,800	16,781
Total - -	21,612	23,936	23,535

The charges tried by the above courts are as follows:—

Crimes Tried by General Courts-Martial.

——	1865.	1866.	1867.
Mutiny - - -	—	16	1
Desertion - - -	34	5	7
Insubordination - -	94	64	72
Disobedience - - -	15	2	1
Quitting or Sleeping on Post -	1	6	—
Drunk on duty under arms -	—	1	—
Habitual drunkenness - -	2	7	1
Disgraceful conduct - -	16	12	14
Absent without leave - -	7	4	1
Making away with necessaries -	18	8	6
Miscellaneous - - -	23	26	21
Total - -	210	151	124

Crimes Tried by District Courts-Martial.

——	1865.	1866.	1867.
Mutiny - - -	—	2	—
Desertion - - -	1,865	1,848	2,023
Insubordination - -	1,019	961	959
Disobedience - - -	284	179	116
Quitting or Sleeping on Post -	362	368	309
Drunk on duty under arms -	550	362	362
Habitual drunkenness - -	1,225	1,298	1,289
Disgraceful conduct - -	684	635	418
Absent without leave - -	613	584	521
Making away with necessaries	1,152	1,357	1,099
Miscellaneous - - -	1,222	2,371	1,188
Total - -	8,976	9,965	8,284

Crimes Tried by Regimental Courts-Martial.

——	1865.	1866.	1867.
Mutiny - - -	—	—	—
Desertion - - -	15	31	5
Insubordination - -	159	148	118
Disobedience - - -	155	117	91
Quitting or Sleeping on Post -	112	121	169
Drunk on duty under arms -	1,253	990	1,108
Habitual drunkenness -	5,626	8,199	8,063
Disgraceful conduct - -	23	30	25
Absent without leave -	3,159	3,174	3,058
Making away with necessaries	1,515	1,580	1,363
Miscellaneous - -	3,877	2,250	3,780
Total - -	15,894	16,640	16,780

Various suggestions have been made to us affecting the constitution and procedure of courts-martial by experienced military officers as well as by distinguished members of the legal profession, who have been officially or professionally engaged in them.

We would first call attention to the remarks made on the nature of the military law which has to be administered in these courts.

The evidence before us shows that military law as laid down in the Acts of Parliament and the Articles of War is in a complicated state, and that not only in the courts themselves, but even in the highest military departments, there is often much difficulty in arriving at a just conclusion, owing to the different sources to which reference has to be made.

We would especially call attention to the evidence of His Royal Highness the Field Marshal Commanding-in-Chief. His Royal Highness expresses an opinion that the frequent re-assembling of courts-martial for the purpose of revising their proceedings, to which we shall hereafter advert, is attributable mainly to the difficulty which the courts often experience in ascertaining the meaning of the wording of the Mutiny Act and Articles of War. His Royal Highness strongly recommends that both should be revised, with a view to their being rendered more clear and simple.

The Right Hon. Thomas E. Headlam, formerly a Judge Advocate-General, states that the Mutiny Act, as it at present exists, is very confused and unduly long, and that there are some provisions in it which are unsuitable and unnecessary, and some which are obsolete. He recommends that a permanent military code should be enacted, and that only that part of the Mutiny Act which authorizes the number of men should be submitted annually to Parliament; and that the military code should be made to resemble the Naval Discipline Act.

The Right Hon. J. R. Mowbray, also formerly a Judge Advocate-General, gives his opinion that military law is in a very "confused," "uncertain," and "conflicting state." He says that "in addition to the Mutiny Act, seven other Acts of Parliament, and "the Queen's and War Office Regulations, he had often to refer to Royal Warrants, with "reference to pay and promotion;" and he adds, that military law being in a condition "which is perplexing to lawyers, he is afraid it must be unintelligible to soldiers;" and both he and Mr. Headlam agree in recommending that the Mutiny Act should be very carefully revised and re-written, and made as clear as possible.

We have received other evidence to the same purport, and we strongly recommend that the simplification of military law as suggested should receive the immediate attention of Your Majesty's Government.

It is obvious that laws affecting the honour, the liberties, and the lives of Your Majesty's subjects should be as clear and simple as circumstances will allow, and it is equally obvious that the frequent re-assembling of courts-martial for revision, referred to by His Royal Highness, must tend to diminish the respect with which they ought to be regarded by the British army.

We believe that the task of consolidating the law with the above object will be best performed on the responsibility of Your Majesty's Government.

It also appears to be very desirable that some kind of text book on military law and the laws of evidence should be prepared in a clear and concise form for the special convenience and instruction of the officers of the army, and for the use of courts-martial; and we think a suggestion made by Mr. Headlam, to make known to the army, from time to time, any important decisions of the Judge Advocate on military law worthy of consideration.

In the course of the evidence many comments have been made on the present constitution and practice of courts-martial. Opinions have been expressed that these courts are inadequate, as at present constituted, to deal with difficult questions of law which frequently arise in the course of military trials.

Mr. Vernon Harcourt, a distinguished member of the Bar, while he advocates the maintenance of courts-martial under military control, and admits that justice must be administered by them in a somewhat ruder manner than in the courts of Westminster Hall, complains of the want of a sufficient knowledge in members of courts-martial of the laws of evidence, and recommends that this point should be more attended to.

Two modes have been proposed for remedying these defects, the one that the president of every general court-martial should be a barrister, the other, that more attention should be paid to the education of officers in military law, and that the office of Deputy Judge Advocate should invariably be filled by a barrister or by an officer on whose advice in legal practice, and especially on points of legal evidence, the court could at all times confidently rely.

We adopt the latter view, and we think that inasmuch as courts-martial are tribunals for the trial of issues, the determination of which must to a great extent depend upon the custom and usages of war and of military service, the president and all the members of the court should have a practical knowledge and experience in those usages, and that it is therefore essential to maintain strictly the military character of the court.

At the same time we consider it to be a matter of the first importance in tribunals before which the lives and liberties, and the honour of Your Majesty's subjects are sometimes at stake, that no means should be neglected of securing to those who come under their jurisdiction, as far as may be practicable, the protection afforded to a prisoner on his trial before one of the ordinary courts of law.

We recommend that courts-martial should in the main be constituted as at present, and that the duties of Deputy Judge Advocate should continue to be discharged as laid down in Your Majesty's Regulations and the Articles of War, but that in all appointments to that office a competent knowledge of the laws of evidence, and of the procedure in the ordinary criminal courts, should be considered an indispensable qualification.

We also recommend that every subaltern officer, before sitting as a member of a court-martial, and previous to each step of promotion, should pass an examination before a board, of which a Deputy Judge Advocate, or some one deputed by the Judge Advocate-General, should be a member, and conduct that part of the examination which relates to the duties of a member of a court-martial. We would especially call attention to the answer to question 5151 in Major-General Simmons's evidence, in which he refers to a system which he carried on, apparently with great advantage, among a large number of young officers in the Engineer department at Chatham.

We believe that a simplification of the law as above suggested, and a strict enforcement of these recommendations, would materially tend to the more satisfactory working of these courts.

Amongst the crimes which have to be dealt with by courts-martial is that of embezzlement. It is an offence not necessarily of a military character, and the trial often involves an examination into accounts of a complicated nature. We recommend that whenever it is practicable, cases of embezzlement of more than common importance be submitted to an ordinary criminal court, as having more experience in dealing with such charges, and greater facilities for thoroughly investigating them.

The present rule of examining witnesses in general courts-martial which requires that questions shall be submitted in writing to the president of the court, previous to being put to the witness, has been much animadverted upon. It is contended that this practice causes frequent and inconvenient delay, and often seriously increases the expense of the trial. On the other hand, it is held to be both a means of protection to the court itself, and a security to the prisoner, that he may not be prejudiced by a question not bearing directly on the case. It is clearly the duty of the president and Judge Advocate to protect the prisoner from any improper question, and we recommend that wherever the services of a sworn shorthand writer can be conveniently obtained, and a full and accurate record of the proceedings thereby secured, the examination be conducted *vivâ voce* as in our ordinary courts.

By the present Articles of War a prisoner under trial before a general court-martial is not entitled as of right to a list of the witnesses to be brought against him. We think that this right should be conceded to him, and a list of the witnesses, together with the charges, should be furnished to him as a matter of right a reasonable time previous to the trial, and that he should also have reasonable notice of any additional witnesses whom in the course of the proceedings it may be found desirable to adduce.

The confirmation and revision of courts-martial have constituted important points in our inquiry. We have already remarked that the confirming authority may approve and confirm the proceedings, or order the court to re-assemble for the purpose of reconsidering their proceedings, and revising their decision.

Objections have been made to the exercise of this power, on the ground that it is contrary to the spirit of English criminal law, more especially when exercised with the object of obtaining a revision of the finding of the court, by which the guilt or innocence of the accused is decided. Much, it is said, depends on the manner in which a witness gives his evidence, with which the confirming authority is necessarily unacquainted, his knowledge of the case being derived from the written proceedings of the court; and for this and other reasons it is urged that at least the decision of the guilt or innocence of a prisoner should be left exclusively with those who have the opportunity of witnessing all the circumstances of the trial.

We find that in 375 cases in which during the year 1867 courts were re-assembled

for the revision of sentences, only twice were findings of conviction reversed, and in only 48 cases was there any mitigation of punishment.

We think that, while it is clearly undesirable that a court should be re-assembled with the view either of revising a finding of acquittal or of increasing the punishment, it would be far better in the few cases in which a confirming officer thinks it right that a finding of guilty should be reversed or the sentence should be mitigated, that he should act on his own responsibility.

The practice of re-assembling the court is often attended with inconvenience and sometimes with hardship to the prisoner, and this latter is especially felt in districts remote from head-quarters, where the accused, notwithstanding his acquittal, must necessarily be remitted back to prison, and kept there until the finding has been dealt with by the confirming authority. Instances of this were brought under our notice, and our remark especially applies to Your Majesty's Indian dominions, where the courts are often held at great distances from the quarters of the confirming officer, and much time is occupied in obtaining his decision.

It remains only to consider the cases when the sentence passed may be contrary to law, and the mistake cannot be corrected by the confirming officer, and where from the peculiar circumstances the sentence awarded cannot properly be carried out. These instances are so very rare that we have come to the conclusion that it is not necessary in any case to retain the practice of re-assembling the court, but that after the finding of the verdict and the declaration of the sentence, the court should be absolutely discharged from any further consideration of the case.

We think that whenever the finding of any court-martial is one of "not guilty" it should be announced in open court, and the prisoner immediately discharged; when of "guilty," the verdict should also be announced in open court, and the sentence in this manner declared, and that thereupon the prisoner should be detained in custody, but the sentence should not be further carried out until the legality and propriety of the verdict and sentence have been examined by the proper authority.

Ample statutory powers should also be vested in the confirming authority to commute sentences of punishment that are open to objection, for some punishment not greater in degree, and to make such remarks on the proceedings of the court as he may think fit.

Many of the remarks, and especially those relating to revision, which we have submitted with respect to general courts-martial, apply equally to district and regimental courts.

The crimes submitted for trial before district courts are generally of a less serious character than those disposed of by general courts, but it sometimes happens that they involve difficult questions of law, and the presence of a Deputy Judge Advocate, not now required, would, under such circumstances, be of advantage. This advantage may we think, be sufficiently obtained by intrusting to the convening officer, either at his own discretion, or on the application of the prosecutor or the prisoner, the power of calling for the assistance of a Deputy Judge Advocate in cases of more than common difficulty; and with this object we recommend that the number of Deputy Judge Advocates should be increased.

It will be seen on reference to the returns which accompany this Report how very large a proportion of military crimes are tried before regimental courts. In the years 1865, 1866, and 1867 they constituted about two-thirds of the cases submitted for trial. They are generally of the simplest kind as regards proof, and a majority of them might be safely dealt with under the powers intrusted to the summary jurisdiction of a commanding officer.

It is a question whether the frequency of regimental courts-martial does not tend to diminish in the mind of the soldier that dread of them which ought to exist if they are to have their proper weight in the maintenance of discipline and the prevention of crime, and it has been submitted for our consideration whether the powers of commanding officers might not be advantageously increased, so as to lessen the number of trials by these courts. Some of the evidence, indeed, is in favour of abolishing regimental courts altogether. We are not prepared to recommend the latter course, but we concur in the view that the jurisdiction of the commanding officer may be safely extended, and we would suggest that his power of sentencing to imprisonment be increased from 7 to 21 days. We would restrict the convening of regimental courts-martial to cases where a district court-martial cannot conveniently be assembled, and we recommend that a regimental court should be composed of officers of not less than three years standing. We also recommend that a record of the proceedings be forwarded to the officer commanding the district.

The above comprise all the suggestions which we venture to submit to Your Majesty with respect to this branch of the inquiry intrusted to us.

Our object in the changes which we have recommended has been rather to strengthen than alter a system which we have every reason to believe is working beneficially, and under which justice is administered with impartiality in Your Majesty's army.

Before closing our remarks we think it right to revert to a portion of our former report which had exclusive reference to military punishments. Since we had the honour of submitting it, we have had opportunities of examining voluminous returns furnished to us from the Horse Guards.

They contain a detailed account of the courts-martial, the crimes, and the punishments inflicted by courts-martial in every branch of the military service during the years 1865, 66, and 67.

An examination of these returns has enabled us to obtain a more correct knowledge of the nature, extent, and progress of military crime than we before possessed, and we regret to add that the result has not been altogether satisfactory.

In crime generally, with few exceptions, there appears to have been a tendency in the three years to which the returns apply, to a decrease, but an increase has taken place in the trials for drunkenness.

In 1865 there were tried 6,853 charges of habitual drunkenness; there were also in the same year 1,803 charges of drunkenness on duty. In 1866 there were 9,504 of the former, and 1,353 of the latter; in 1867 there were 9,353 of the former, and 1,470 of the latter.

The combined charges involving drunkenness were 1865, 8,656; 1866, 10,857; 1867, 10,823.

It ought, however, to be remembered that since the year 1866 the charge for habitual drunkenness was made imperative on the commission of the fourth offence.

These returns afford the strongest corroboration of the evidence given before us of the inadequacy of the former mode of punishment to repress this crime, and strengthen our recommendation, which is now being acted upon, that an experiment should be made of a system of fines as advocated by men of all ranks in Your Majesty's army.

It will be seen from the following return that in the trials for insubordination there has latterly been an increase.

Years.	No. of Men tried for Insubordination.	Average Strength during the Year.	No. of Men tried per 1,000.
1865	1,272	198·048	6·4
1866	1,173	190·919	6·1
1867	1,149	189·781	6·0
1868*	1,397	186·508	7·4

* The returns of six regiments for 1868 have not yet been received.

In some of our military prisons the punishment as now inflicted is, in our opinion, quite inadequate in its nature or its severity to the repression of the crime of insubordination, and we again strongly recommend that some central military prison should, with the least possible delay, be provided, in which stricter discipline can be exercised than is possible in some of the present places of confinement, and that in the meantime arrangements should be made with the authorities of civil prisons for the reception of the requisite number of military prisoners, care being taken to separate them as far as possible from the other prisoners. We would also suggest that prisoners awaiting trial for this crime should be confined, where it is possible, in separate cells, instead of in the prisoners' guard room.

Public attention has lately been much directed to the custom of marking prisoners discharged with ignominy from the military service, the letters B. C. indicating Bad Character, and D. Desertion.

The frequent use of the term "branding," has led to an erroneous impression that marking is effected in some painful and cruel manner.

The mode of marking is, in truth, attended with so little pain, that in Your Majesty's service, both military and naval, it is a common occurrence for men to mark

themselves in a similar manner for the purpose of recording events in their past lives, the attachments which they have formed, or the ships and regiments to which they belong.

The real object of marking is not the punishment of the offender but the protection of the public, who are frequently defrauded of the bounty paid on the re-enlistment of discharged men, who by their general bad conduct have brought disgrace on themselves and the profession to which they belong, and are no longer likely to be of any advantage to the public service.

But it is the system of tempting recruits by bounties without any previous inquiry into their character which is the chief cause of fraudulent re-enlistment, and if, as we have reason to hope, measures can be taken to reform this system, all motive for continuing a practice, which nothing but necessity can justify, will cease to exist.

The returns relating to the punishment of imprisonment have had our serious consideration. We shall best show their nature and tendency by a short analysis. The following is the number of days' imprisonment inflicted in each of three years in that portion of Your Majesty's forces from which the returns have been compiled:—

Years.	No. of Men.	Days' Imprisoment.
1865	198,048	1,144,745
1866	190,919	1,121,757
1867	189,781	1,134,058

It will be observed on reference to the returns, which are given fully in the Appendix, that the number of days' imprisonment inflicted in each regiment and in each branch of the service differs materially; this arises in part from the different system of discipline carried on in each, but may, we believe, be attributed in great measure to a variety of local and other circumstances, but especially to the greater or less degree of temptation to crime which exists in the various military stations at home and abroad. It is obvious that so large an amount of imprisonment as is here shown cannot be enforced without a serious loss of service and diminution of the efficiency of the British army, and independently of the immediate object of our inquiry, the repression of crime, this is of itself of sufficient importance to demand an earnest consideration whether means may not be found to, at least, mitigate so serious a defect. We believe that this will have been accomplished to a considerable extent by attention to the recommendation in our former Report, already acted upon, namely, that fines be substituted for imprisonment for the crime of drunkenness. A further diminution might be effected by a general alteration of the scale of imprisonment. When the change we have recommended for the military prisons is fully carried out, and stricter discipline enforced, the periods of imprisonment under each sentence may be materially and beneficially shortened.

We have now considered the two subjects more immediately referred to us.

In dealing with courts-martial, whilst aiming at the complete independence of the tribunal, we have endeavoured to secure in its members a better acquaintance with military law, and to increase the sense of responsibility under which they act; and we believe that our recommendations, if carried into effect, will strengthen the belief in the impartiality of trial by courts-martial, and in the justice both of their finding and sentence.

In the punishments, we have endeavoured to strengthen what is effective and deterrent, and to abolish what is useless or demoralising. Whilst keeping in mind the paramount necessity of maintaining discipline in the army, we cannot overlook the fact that discipline could be best maintained should dismissal from Your Majesty's service come to be universally regarded by the soldiers as a severe punishment.

This cannot be brought about by any change in the system of courts-martial or by any modification in the punishments in use in the army, but we believe our recommendations tend in that direction.

The following is a summary of the chief alterations which we have recommended:—

1st. That the Mutiny Act and Articles of War should be carefully redrawn.

2nd. That a text book on military law be prepared for the convenience and instruction of officers, and for the use of courts-martial.

3rd. That a stricter examination of officers in military law be enforced, such examination to be conducted before a board of officers by a Deputy Judge Advocate, or some one deputed by the Judge Advocate-General.

4th. That the convening officer of a district court-martial be enabled either at his own discretion or on the application of the prosecutor or prisoner to require the attendance of a Deputy Judge Advocate.

5th. That for this object the present number of Deputy Judge Advocates be increased.

6th. That with the view to reducing the number of regimental courts-martial enlarged powers be given to commanding officers.

7th. That whenever the services of a shorthand writer can be obtained the examination of witnesses before a general court-martial be conducted *vivâ voce*.

8th. That cases of embezzlement be submitted to the ordinary criminal tribunals, where there are facilities for so doing.

9th. That in general courts-martial the list of witnesses, together with the charges, be furnished to a prisoner as matter of right previous to trial, and that he should also have reasonable notice of any additional witnesses whom in the course of the proceedings it may be thought desirable to adduce.

10th. That the practice of re-assembling a court for the purpose of revising their proceedings be discontinued, power being given to the confirming authority in certain cases to commute the sentence.

11th. That a regimental court should only be had recourse to when a district court cannot conveniently be assembled, and that it be composed of officers of not less than three years' standing.

12th. That the proceedings of all regimental courts be forwarded to the General Officer commanding the district.

With regard to military punishments we have recommended:—

1st. That one or more central military prisons be established, in which an improved system of military discipline can be carried on, in which separate confinement shall form an indispensable part, and that until that time arrangements should be made with the authorities of civil prisons for the reception of the requisite number of military prisoners, care being taken to separate them as far as possible from the other prisoners.

2nd. That the term habitual drunkenness as applied to the fourth offence be abolished.

3rd. That a scale of fines be substituted for the present system of imprisonment for this offence.

4th. That such fines constitute a fund for the benefit of the army generally.

5th. That the punishment of non-commissioned officers need not necessarily be accompanied by reduction to the ranks.

6th. That greater facility be afforded for the discharge of men of bad character.

7th. That the practice of "marking" be abolished when altered circumstances referred to in our Report will admit of it.

We annex a short analysis compiled from the Returns above alluded to, some of which are given at greater length in the Appendix.

J. WILSON PATTEN.
HARTINGTON.
EVERSLEY.
J. PEEL, Lieut.-General.
JOHN ROBERT MOWBRAY.
THOS. EMERSON HEADLAM.
RUSSELL GURNEY.
J. YORKE SCARLETT, Lt.-General.
A. HORSFORD, Maj.-General.
HENRY EYRE, Lieut.-General.
SAM. WHITBREAD.
J. C. W. VIVIAN.
S. NETTERVILLE LOWDER, Major-General.

JOHN LLOYD WHARTON,
Secretary.

May 14, 1869.

NUMBER OF COURTS-MARTIAL.

	1865.	1866.	1867.
Cavalry.			
General	7	13	5
District	441	459	477
Regimental	839	842	860
Artillery.			
General	24	4	11
District	1,248	975	1,004
Regimental	2,357	2,137	2,389
Engineers.			
General	—	2	2
District	154	152	159
Regimental	278	307	330
Military Train.			
General	—	—	1
District	149	124	83
Regimental	153	146	120
Infantry.			
General	124	101	84
District	5,028	5,306	4,928
Regimental	10,810	13,368	13,082
TOTALS.			
GENERAL	155	120	103
DISTRICT	7,020	7,016	6,651
REGIMENTAL	14,437	16,800	16,781
Total	21,612	23,936	23,535

STRENGTH of the REGIMENTS on which the RETURNS are FOUNDED.

	1865.	1866.	1867.
Cavalry	17,038	16,828	16,127
Artillery	31,950	31,157	31,325
Engineers	4,428	4,467	4,258
Military Train	1,706	1,714	1,721
Infantry	144,166	135,703	128,981
Total	199,288	189,869	182,412

N.B.—One regiment omitted to send in return in 1866 and several in 1867.

CRIMES TRIED.
Cavalry.

	1865.	1866.	1867.
Mutiny	—	7	—
Desertion	164	201	229
Insubordination	109	79	81
Disobedience	34	26	19
Quitting or Sleeping on Post	42	59	57
Drunk on duty under arms	90	67	75
Habitual drunkenness	141	180	214
Disgraceful conduct	39	29	37
Absent without leave	372	381	339
Making away with necessaries	118	111	95
Miscellaneous	224	296	297
Total	1,333	1,436	1,443

CRIMES TRIED.
Artillery.

	1865.	1866.	1867.
Mutiny	—	—	—
Desertion	262	228	319
Insubordination	246	187	198
Disobedience	105	80	57
Quitting or Sleeping on Post	121	91	152
Drunk on duty under arms	285	171	194
Habitual drunkenness	1,003	871	965
Disgraceful conduct	95	78	78
Absent without leave	657	494	524
Making away with necessaries	357	324	285
Miscellaneous	977	769	843
Total	4,108	3,293	3,615

CRIMES TRIED.
Engineers.

	1865.	1866.	1867.
Mutiny	—	—	—
Desertion	44	29	30
Insubordination	23	21	30
Disobedience	7	6	3
Quitting or Sleeping on Post	9	14	6
Drunk on duty under arms	25	30	40
Habitual drunkenness	154	218	221
Disgraceful conduct	13	8	2
Absent without leave	18	61	84
Making away with necessaries	28	9	13
Miscellaneous	48	65	62
Total	432	461	491

CRIMES TRIED.
Military Train.

	1865.	1866.	1867.
Mutiny	—	—	—
Desertion	70	48	45
Insubordination	23	16	10
Disobedience	10	6	3
Quitting or Sleeping on Post	7	8	
Drunk on duty under arms	5	10	19
Habitual drunkenness	33	62	36
Disgraceful conduct	7	11	3
Absent without leave	109	65	69
Making away with necessaries	99	69	70
Miscellaneous	60	60	30
Total	423	355	287

CRIMES TRIED.
Infantry.

	1865.	1866.	1867.
Mutiny	—	11	1
Desertion	1,374	1,378	1,412
Insubordination	871	870	830
Disobedience	298	180	126
Quitting or Sleeping on Post	296	323	261
Drunk on duty under arms	1,398	1,075	1,142
Habitual drunkenness	5,522	8,173	7,917
Disgraceful conduct	569	551	437
Absent without leave	2,560	2,761	2,564
Making away with necessaries	2,083	2,432	2,005
Miscellaneous	3,813	4,042	3,757
Total	18,784	21,796	20,452

PALL MALL

LIST OF WITNESSES EXAMINED

BEFORE

THE ROYAL COMMISSION ON COURTS-MARTIAL AND MILITARY PUNISHMENT.

Date.	Name of Witness.	No. of Question.
1868:		
23rd March & 7th May	Vernon Lushington, Esq., Q.C., Deputy Judge Advocate-General	1 to 292; 2656 „ 2768
26th March	Major-General Randal Rumley	293 „ 747
26th „ & 30th „	Lieutenant-Colonel The Honourable William Henry Adelbert Fielding	748 „ 1092
30th „ & 2nd April	Colonel Joseph Henry Laye, Deputy Judge Advocate of the London district	1093 „ 1262; 1578 „ 1660
2nd „	Lieutenant-General Lord William Paulet, K.C.B., Adjutant-General of the Forces.	1263 „ 1577
2nd „ & 23rd „	Captain Lonsdale Augustus Hale, R.E.	1661 „ 1780
27th „	Colonel G. R. Egerton, C.B., Deputy Adjutant-General of the Forces	1781 „ 1784; 2244 „ 2325
27th „ & 30th „	Major-General The Honourable James Lindsay, Inspector-General of the Reserve Forces	1785 „ 1885; 1992 „ 2143
27th „	Col. E. R. Jeffreys, C.B., Commanding Depôt Battalion at Parkhurst	1886 „ 1991
30th „	Viscount Walden (late Captain and Lieutenant-Colonel, Grenadier Guards)	2144 „ 2243
4th May	Major-General The Right Honourable Sir Henry K. Storks, G.C.B., G.C.M.G.	2326 „ 2573
4th „ & 7th „	The Right Honourable Thomas Emerson Headlam, a Member of the Commission	2574 „ 2655; 2835 „ 2844
7th „	William G. V. Vernon Harcourt, Esq., Q.C.	2769 „ 2834; 2845 „ 2847; 4924 „ 4925
7th „	Captain A. P. Miller, Governor of the Military Prison, Aldershot	2848 „ 2938
14th „	Col. Edmund Henderson, R.E., Chairman of the Board of Directors of Convict Prisons (now Chief Commissioner of Metropolitan Police).	2939 „ 3055
14th „	Captain Folliott Powell, Governor of the Convict Prison at Chatham	3056 „ 3197
18th „	Non-commissioned officers and privates examined at Aldershot — Sergeant-Major A., Cavalry	3198 „ 3283
	Troop Sergeant-Major B.	3284 „ 3353
	Troop Sergeant-Major C.	3354 „ 3385
	Bombardier D.	3386 „ 3441
	Corporal E.	3442 „ 3469
	Private F.	3470 „ 3505
	Provost Sergeant	3506 „ 3527
	Private G.	3528 „ 3572
	Private H.	3573 „ 3603
21st „	Lieut.-Col. William Agg, Commanding 51st Regiment	3604 „ 3768
21st „	Lieut.-Col. James Sinclair Thomson, Commanding 54th Regiment	3769 „ 3874
21st „	Colonel (now Major-General) S. N. Lowder, C.B., Deputy Adjutant-General Royal Marines (a Member of the Commission).	3875 „ 3977
25th „	George Clifton, Esq., Governor of the Portland Convict Prison	3978 „ 4082
25th „	The Right Honourable John Robert Mowbray, Judge Advocate-General (a Member of the Commission).	4083 „ 4215
28th „	His Royal Highness The Duke of Cambridge, K.G., K.P., G.C.B., G.C.H., G.C.M.G., the Field Marshal Commanding-in-Chief.	4216 „ 4397
28th „	Lieutenant-General Sir Edward Lugard, G.C.B., Under Secretary of State for War.	4398 „ 4520
8th June	Lieutenant-Colonel William Gregory Dawkins, Coldstream Guards	4521 „ 4551
8th „	Colonel Edmund Haythorne (formerly Adjutant-General in India)	4552 „ 4706
8th „	Lieutenant-General The Honourable Sir James Yorke Scarlett, K.C.B. (a Member of the Commission).	4707 „ 4777
15th „	Maj.-Gen. John Studholm Brownrigg, C.B., Commanding at Shorncliffe	4778 „ 4923
17th July	Alfred Radcliffe, Esq., Prison Department, War Office	4926 „ 5031
1869:		
16th April	Captain H. M. Hozier, 2nd Life Guards	5032 „ 5131
16th „	Major-General I. L. A. Simmons, R.E.	5132 „ 5258

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MINUTES OF EVIDENCE

TAKEN BEFORE

THE ROYAL COMMISSIONERS

APPOINTED TO INQUIRE INTO

THE CONSTITUTION AND PRACTICE OF COURTS-MARTIAL IN THE ARMY, AND THE PRESENT SYSTEM OF PUNISHMENT FOR MILITARY OFFENCES,

At No. 6, Old Palace Yard, Westminster.

Monday, 23rd March 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
THE RIGHT HON. RUSSELL GURNEY.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

VERNON LUSHINGTON, ESQ., examined.

V. Lushington, Esq.
23 March 1868.

1. (*Chairman.*) What office do you hold?—I am Deputy Judge Advocate-General.

2. What is the exact nature, and what are the peculiar duties of the office of Deputy Judge Advocate-General?—I am the Judge Advocate-General's deputy, and as such I see all the work that passes through the office.

3. How long have you held that office?—I have actually done the duties since November 1863, but I have held the office since May 1864.

4. But the nature of your office is such that all proceedings of courts-martial go through your hands and you have an opportunity of forming a judgment upon them?—Yes, whatever work is done in the office I see, and take my part in.

5. And of course you are acquainted with the nature and the duties of all courts-martial?—Yes, as far as a civilian can know them. We do not receive in our office, generally speaking, the proceedings of regimental courts-martial, but they are from time to time referred to us. There is no substantial difference between them and general and district courts-martial.

6. Will you state to the Commission how many kinds of courts-martial there are?—They are the following: the general court-martial, the district or garrison court-martial, the regimental court-martial, and the detachment court-martial. Those are the common courts-martial. Then there are what I may call extraordinary courts-martial, which are the detachment general court-martial, and the general court-martial, held in India under the 101st section of the Mutiny Act, and general court-martial held for the trial of civil offences in places out of Her Majesty's dominions.

7. Will you state the nature of a general court-martial?—A general court-martial is the highest criminal tribunal in the army. It is the only court which can try a commissioned officer; it is the only court which can sentence a soldier to death, or penal servitude; and it is the only court which has power in all cases to sentence a soldier to be discharged with ignominy.

8. Are the duties of a court-martial exclusively confined to military crimes?—No. Under the 81st Article of War, a court-martial has jurisdiction over offences which are called "disgraceful conduct," and which really embrace all felonies whatsoever; so that a soldier is often tried for stealing, which is regarded for that purpose as a military offence. In the same way, in the case of the officers who were tried in Jamaica in 1866, it was alleged that they had committed murder; if they had been tried under the civil law they would have been tried for murder, but they were tried by general court-martial for scandalous conduct in abusing their powers under martial law. But generally speaking, of course, courts-martial deal only with military crimes.

9. In what way does a district court-martial differ from a general court-martial?—It differs from a general court-martial in its constitution, the number of officers not being so large; and it differs in its powers, in that it has not the power to try a commissioned officer, and has not the power to award a sentence of death or penal servitude.

10. What is the nature of a regimental court-martial?—A regimental court-martial is constituted of officers belonging to the regiment, and its powers are limited. It cannot award more than 42 days imprisonment.

11. Can a regimental court-martial try officers?—No.

12. What is a detachment court-martial?—A detachment court-martial is, for most practical purposes, the same as a regimental court-martial, but it arises when a part of a regiment is detached from the rest of the regiment on service, or when there is a detachment of troops consisting of portions of several regiments.

13. How do you distinguish a detachment general court-martial?—A detachment general court-martial is a very unusual tribunal indeed. It is for the purpose of trying offences committed against the population of a foreign country where a British army may be. It has the power of life and death.

V. Lushington, Esq.

23 March 1868.

14. How is it constituted?—It may be constituted of three officers only. It is regulated by a section in the Mutiny Act, and is really of importance, I should think, only on active service.

15. Under whose appointment is it?—I think it is by the commanding officer on the spot; it is for the commanding officer of the detachment of the troops, but there is a provision that the sentence shall not be executed without the approbation of the General commanding the army.

16. Are general courts-martial all conducted in the same manner, or do the courts-martial held in any of our provinces (in India, for example,) differ from the courts-martial held in England?—I should say that there was no substantial difference.

17. (*Lieut.-Gen. Scarlett.*) Is there not a difference as to number?—There is a difference as to the number.

18. (*Chairman.*) What is the constitution of each court?—In the United Kingdom and the Channel Islands a general court-martial must consist of at least 13 officers. Then there is a provision made in the Articles of War for a smaller number forming that tribunal in different places. The 106th Article of War regulates the number of officers required to constitute a general court-martial. You will see there that in certain places five commissioned officers would be sufficient; in other places seven would be sufficient; and lastly, in England and elsewhere, which practically means the United Kingdom and the Channel Islands, 13 are required. That Article is more explicit than the section in the Mutiny Act. The Mutiny Act deals with the subject in the 8th section.

19. Are the courts-martial the same in every branch of the service, is there any difference, for instance, between a court-martial held in the Guards and one held in the line?—Yes, there is a power in the Articles of War for a court-martial for the trial of men belonging to the Guards to be constituted of officers belonging to that regiment only. Generally speaking, a district or general court-martial is constituted of officers belonging to various corps quite irrespective of the regiment to which the culprit belongs; but in the Guards such a court-martial is constituted of officers belonging to the brigade of Guards only.

20. Is it the same with respect to the Artillery?—The Artillery have a similar power under, I think, the 150th Article of War.

21. (*Lieut.-Gen. Scarlett.*) Does that include the Engineers?—I think not.

22. (*Chairman.*) But their powers are identical, I presume?—Yes, the powers are identical.

23. And the difference is merely in the constitution of the court?—That is all.

24. Have you stated the whole of the powers of a general court-martial as to the trial and punishment of prisoners?—I have not. I have endeavoured to state what are the powers of general courts-martial as distinguished from district and regimental courts-martial; but there are a number of punishments which a general court-martial has power to award.

25. You stated that it was the only tribunal which could try a commissioned officer; to what punishments can a commissioned officer be subject?—He may be sentenced to death, to penal servitude, to imprisonment, to cashiering, to lose regimental or army rank, or to be reprimanded, and in one case he is liable to a fine.

26. Under what circumstances can he be subject to a fine?—In the case where he has embezzled property belonging to the Army or for Her Majesty's use; that case is specially provided for in the 17th section of the Mutiny Act.

27. Is that in the nature of a fine, or in the nature of restitution?—It is both; that is to say, there is a power under that section of awarding a fine, and it is made absolutely compulsory upon the court to sentence the offender to make good the loss. I have never known a case, however, in which a fine has been imposed in addition to the amount which the offender has embezzled.

28. Then none of the other courts-martial award the punishment of death?—Nothing but a general or general detachment court-martial, and also those peculiar tribunals which I have mentioned, namely, a general court-martial held in India 120 miles away from any of the Presidencies, or a general court-martial under the 145th Article of War.

29. A general court-martial also has exclusively the power of discharging with ignominy from the army, has it not?—In all cases, that is to say, for any offence, a general court-martial may discharge a soldier; but a district court-martial can only sentence a soldier to be discharged for desertion or for some act of disgraceful conduct. That is of some consequence, because a man is often brought to a general court-martial for the very purpose of getting rid of him.

30. What length of imprisonment has a general court-martial the power of awarding?—Not exceeding two years.

31. In what respect do the punishments differ under a district court-martial?—A district court-martial has power to award imprisonment up to two years, and it has power to award corporal punishment in certain cases.

32. What are those cases?—Those cases are now determined by the Mutiny Act of last year. They practically are confined to mutiny and insubordination accompanied with personal violence, except in the case where the soldier is in the field, or is serving on board a ship not in commission, or on the line of march. That last point is, I believe, rather doubtful, but if you will refer to the 11th and 22nd sections of the Mutiny Act, you will find exactly what the provisions of the Statute are.

33. Within what limits is the power of a regimental court-martial confined?—Its power of imprisonment is limited to 42 days, and practically now it no longer has the power, except on service in the field or on board ship, of awarding corporal punishment, the reason being that it is unusual, and in fact I may say illegal, to bring before a regimental court-martial an offender on such a charge as mutiny or insubordination accompanied with violence.

34. He then ought to be tried by a district court-martial?—He ought to be tried by a district court-martial.

35. But does it never happen that a soldier is brought before a regimental court-martial for those crimes?—I should think never, except on service in the field or on board ship.

36. In your experience has corporal punishment under those sentences of court-martial been on the increase or the decrease within the last few years?—It has immensely decreased in the last year.

37. Will you inform the Commission in what way courts-martial are convened?—A general court-martial or a district court-martial is always summoned by a convening officer, under a warrant which he holds, either direct from the Crown or from the Commander-in-Chief, or by delegation. The provision for that is the 6th section of the Mutiny Act. A regimental court-martial is convened by the commanding officer without any special warrant. That is also provided for by the Mutiny Act and the Articles of War.

38. Who is it that decides whether the crimes shall be tried by a general, a district, or a regimental court-martial?—In the first instance, the commanding officer determines whether he will bring a man to a regimental court-martial or not. If it is for an offence which is cognizable by a regimental court-martial, probably he would try the man in that way; but if it is a graver offence, then he has to send up an application for trial to the general officer commanding the district. I have the form if the Commissioners would like to see it. Then the general officer, if he has the power to order a general court-martial, and considers that the man should be tried by a general court-martial, would then convene such general court-martial; but

if, on the other hand, he thought that a district court-martial would suffice, then he would convene a district court-martial; and if he had not the power to convene a general court-martial, and yet it was required, he would then send on the application to a higher authority.

39. You said, "If he has the power of ordering a "general court-martial." What did you mean by that?—That entirely depends upon his warrant. I believe as a fact an officer who has power to convene a district court-martial has generally power to convene a general court-martial, but that depends upon the Horse Guards.

40. Is there no general rule which decides that point?—I can only tell you that I believe every officer who holds an important command in England has a warrant to convene either a general or district court-martial. For instance, the officer commanding at Manchester or the officer commanding at Devonport would have such power, but it entirely depends upon the warrant.

41. (*Lieut.-Gen. Scarlett.*) Would it be the senior officer of the force; for instance, at Aldershot, would it be the senior officer who would have that power?—No doubt that would be so; but it entirely depends upon the warrant. A general court-martial cannot be convened except by an officer holding the necessary warrant. The Act gives power to issue this warrant, and you will see there that the warrant may be issued to any officer holding a command. The provision in the 6th section of the Mutiny Act is as follows: "Her Majesty may, from time to time, in like manner "as has been heretofore used, grant commissions "under the Royal Sign Manual for the holding of "courts-martial within the United Kingdom of Great "Britain and Ireland, and may grant commissions or "warrants under the said Royal Sign Manual to the "chief Governor or Governors of Ireland, the Com-"mander of the Forces, or the person or persons "commanding-in-chief or commanding for the time "being any body of troops belonging to Her Majesty's "army, as well within the United Kingdom of Great "Britain and Ireland and the British Isles as in "any of Her Majesty's garrisons and dominions or "elsewhere beyond seas, for convening courts-martial, "and for authorizing any officer under their respective "commands to convene courts-martial as occasion may "require." That leaves it entirely a matter of discretion practically to the Commander-in-Chief. There are some commands which are not held by general officers. For instance, there is the command at Colchester, which is held at present by Colonel Tidy; he would not have the power of convening a general court-martial.

42. Do you know the nature of the warrant under which that officer holds his command?—I think I had better hand in copies of the warrants.

43. Will you explain to the Commission who, in case a crime happens which ought to be tried by general court-martial, is the authority who should decide that it shall be so tried?—I will state what is the course of proceeding. Supposing the offence committed, such as striking an officer, the offender would be brought before the commanding officer in the ordinary way. Evidence would be given of the commission of the crime, then, that being done, and the soldier being asked what he had to say in his defence, he would then, to use a common phrase, be put back for a court-martial. The evidence would then be abstracted and put on paper, and the form of the charge made out, and then that would be sent by the commanding officer to the general officer of the district with a letter applying for a trial of the man. I have here the form of the application. It is a War Office form, No. 733. It is a letter addressed to the general officer in these words: "Sir,—I have the honour to submit a "charge against private So-and-so under my com-"mand, and request that you will obtain the sanction "of" (the general officer) "that a general or district "court-martial may be assembled for his trial;" and then the commanding officer signs that letter. In a district where the officer commanding is not a General—such as Colchester, for instance—he would, I think, transmit this letter to the Adjutant-General as the organ of the Commander-in-Chief. The Adjutant-General would then forward that charge and the abstract of the evidence to the Judge Advocate-General. The charges would be settled in the Judge Advocate-General's office, and returned by the Judge Advocate-General to the Adjutant-General, and the trial would then be held.

44. By what department would the tribunal of a general court-martial be ordered?—In the Colchester case the order for a trial would emanate from the Adjutant-General.

45. Would he order the officers to compose the court?—No, he would name the president; the other officers of the court take their duty according to a certain roster. There is no actual nomination of officers to sit on the trial.

46. I understood you to say, that in that case the Adjutant-General would decide whether it should be a general or a district court-martial?—Yes, he would, the reason being that the officer commanding at Colchester would not have authority to order a general court-martial; but it would be otherwise at Aldershot, for instance. In that case there would be no correspondence with the Adjutant-General; the officer commanding at Aldershot would send direct to the Judge Advocate-General the charge and the abstract of the evidence, and would receive back the charge settled; and the officer commanding at Aldershot would then himself order the trial.

47. Would that be the case in every command where the officer was a general officer?—I think so; but at any rate in any command where the officer commanding the district had a warrant enabling him to assemble a general court-martial. He must be a general officer to hold a warrant for a general court-martial; but I do not quite know who it is that determines what warrants should issue. I think it is arranged between the Commander-in-Chief and the War Office.

48. (*Lieut.-Gen. Peel.*) When you mention the Adjutant-General you only speak of him as the executive officer of the Commander-in-Chief?—Quite so; he is simply the officer in whose name it is done.

49. (*Mr. Mowbray.*) In the great majority of cases we receive communications directly from the officer commanding the district?—No doubt, the fact being that he holds the necessary warrant.

50. (*Lieut.-Gen. Peel.*) If a crime is committed by a man in any regiment, in the first instance the commanding officer of that regiment decides whether or not he shall be tried by a regimental court-martial; if he thinks it too serious a case for that, he reports to the general officer of the district, whoever that may be, and if the general officer thinks that it ought to be tried by a general or district court-martial, he would order such a court to assemble?—Precisely so; but the commanding officer has a power under the Articles of War of applying to a higher authority for the purpose of trying more serious crimes by regimental court-martial.

51. (*Lieut.-Gen. Eyre.*) Desertion, for example, is distinctly speaking an offence only cognizable by a district or general court-martial; but it may be tried with the sanction of the general officer commanding the station, by a regimental court?—Yes, but not as desertion; as absence without leave.

52. (*Chairman.*) Is there any power in the Horse Guards, or is it in the power of a general officer commanding a district when a case has been submitted to him for a general court-martial or a district court-martial, to remit the case to a regimental court-martial?—There is a general power providing that, by permission, some grave offences may be tried by a tribunal, which otherwise has not jurisdiction over such offences: that power is no doubt exercised from time to time by superior authority; but the provision is somewhat vague, and I think that other persons

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would be much better qualified than myself to state to the Commission what the practice is.

53. (*Lieut.-Gen. Scarlett.*) Are not certain crimes specified which may be tried by a regimental court-martial, and others which must be tried by a general or district court-martial by the Articles of War?—That distinction is often taken, but I do not think that you can say of every offence that provision is made whether it shall be tried by a regimental court-martial or only by a higher court. The Article of War to which I have been referring is the 140th: "No commanding officer shall, by giving in against a prisoner "vague and indefinite charges, try before a regimental "court-martial grave offences which are directed to "be tried by general, district, or garrison courts-"martial.; but as it may be advisable that some of "the foregoing offences, which in certain cases may "admit of less serious notice, should be tried by dis-"trict, garrison, regimental, or detachment courts-"martial, in such cases the officer commanding the "battalion, corps, or detachment, who may deem it "advisable so to proceed, shall lay a statement of the "case, together with the charge he intends to bring, "before the general or other officer commanding the "brigade, district, or garrison, with an application so "to proceed. The General or superior officer will "exercise his discretion in directing the description "of court by which the offender shall be tried; but "the permission to try grave offences by district, "garrison, regimental, or detachment court-martial, "shall be noticed in the monthly return of courts-"martial sent in to Our Adjutant-General."

54. (*Chairman.*) The decision rests with the then general officer?—Yes.

55. Has the person charged with the crime any voice in that; can he object to be tried by one or other of those courts?—No; he has no power to object at all. If he is brought before a regimental court-martial he might say that he wished to be tried by a higher court, but such objection would, I think, certainly be overruled. He has no voice in the matter, though, in some cases, it might be granted.

56. (*Lieut.-Gen. Scarlett.*) Would it not be against his own interest so to object, inasmuch as the regimental court-martial can only give a very limited punishment?—In most cases it would be so; but in some cases a soldier might prefer not to be tried by officers of his own regiment.

57. (*Chairman.*) Does it ever happen that a soldier applies to be tried by a different court from that assigned to him?—Yes, I have known it to happen. There is no right of appeal.

58. Has the general officer the power to direct whether it shall be a regimental or a district court-martial without an application from the officer commanding the regiment?—The application always comes, in the first instance, from the commanding officer of the regiment, and the general officer would communicate with him, and would state what his wishes were.

59. Supposing the general officer takes a different view from the officer commanding the regiment, has he the power to decide which court it shall be?—Certainly.

60. (*Mr. Russell Gurney.*) Without any application from the commanding officer to have the lower tribunal?—Yes.

61. (*Chairman.*) You have stated the number of members of a general court-martial, did you also state the number of members upon a district court-martial?—I did not.

62. Will you state the number of officers composing a district court-martial?—That also varies according to the place in which the court is held. You will find that provided for by the 108th Article of War. It is sometimes seven, in some places five, and in a few places it may consist of three officers only.

63. Of how many members does a regimental court-martial consist?—A regimental court-martial, generally speaking, must consist of five officers; but if that number is found impracticable (which I should say is entirely for the discretion of the commanding officer), then three officers are sufficient. That is provided for by the 112th Article of War.

64. Have you described the whole constitution of the court in the case of a general court-martial? Are there any other officers present, except the president and the members of the court?—There is the Deputy Judge Advocate.

65. What is the duty of the Deputy Judge Advocate in a general court-martial?—The duties of the Deputy Judge Advocate at a general court-martial are now determined by Her Majesty's Regulations, section No. 771.

66. By whom is the Deputy Judge Advocate in a general court-martial appointed?—In the United Kingdom there are now Deputy Judge Advocates of districts. There are three such Deputy Judge Advocates. One for the London district, one for Scotland and the North of England, and then there is a Deputy Judge Advocate for Ireland. The Deputy Judge Advocate attends every general court-martial within his district.

67. What position does he take in the court?—He is a kind of assessor to the court.

68. What is the nature of his appointment?—He holds a deputation from the Judge Advocate-General.

69. To that particular court?—No, not to that particular court; it is a general deputation.

70. Then who appoints him to that particular court?—He holds a general deputation from the Judge Advocate-General to attend any general court-martial held within the district.

71. Then when a general court-martial is assembled, is it for the Deputy Judge Advocate to determine whether he shall attend that court, or not?—The Deputy Judge Advocate of the district, as a matter of duty, attends the court.

72. When a court is assembled, what position does the Deputy Judge Advocate take in the court?—His duties are peculiar. I think, if I was asked to describe them in one word, I should say he was assessor to the court. His duty now is very different from what it was.

73. What is his present duty?—Formerly the Deputy Judge Advocate continually acted as prosecutor, and yet at the same time he was a kind of referee on legal questions. It has been altered, I think, since 1862. It was then provided that in no case should the Deputy Judge Advocate act as prosecutor. These district Deputy Judge Advocates have since been appointed and their powers have been very considerably enlarged. At present it is provided that the Deputy Judge Advocate is to maintain an entirely impartial position and to act as assessor; he is to give his advice on all matters of law, evidence, and procedure, and whether consulted or not it is his duty to interfere to ensure the due formality and legality of the proceedings; he has to sum up the evidence and give his opinion upon the legal bearing of the case before the court proceeds to deliberate on its finding, and his opinion is to be taken as final by the court.

74. (*Mr. Russell Gurney.*) His opinion on what?—On any question of law.

75. (*Chairman.*) The Deputy Judge Advocate then no longer acts as prosecutor?—No.

76. Now that he is no longer prosecutor, who is the prosecutor?—The prosecutor is an officer appointed.

77. By whom?—I really am not quite sure. I do not know whether it is the General convening the court, but I think it is generally provided for otherwise in the regiment to which the prisoner belongs.

78. (*Lieut.-Gen. Scarlett.*) In a district court-martial does the adjutant generally prosecute?—Generally.

79. (*Chairman.*) I think you seem to object to give evidence directly upon the appointment?—I can say that there is no regulation upon it. There is no provision made for it.

80. In the case of a general court-martial will you describe what is the rank which is necessary for an

officer to hold to be a member of that court?—No rank is necessary to enable an officer to sit as a mere member of a general court-martial. An ensign may sit as a member of a general court-martial, but the president must be of a certain rank, he must be a field officer unless it is absolutely impracticable.

81. (*Lieut.-Gen. Scarlett.*) Is it ruled at all by the rank of the person to be tried?—Yes; very much. There are regulations upon it.

82. (*Chairman.*) Supposing it is a field officer who is to be tried, can any officer sit upon that court but a field officer?—The provision upon the subject in the Articles of War is that no field officer shall be tried by any person under the degree of captain.

83. It is only under peculiar circumstances, I presume, that a field officer can be tried by a court of which a captain is a member?—I have no doubt that if a field officer was to be tried, if possible it would be arranged that no captain should sit upon his trial or only one. If you will allow me, I will refer you to the passage in the Queen's Regulations upon that subject, the 738th and 739th sections: "Whenever general officers or colonels are available as "presidents of general courts-martial, no officer of "inferior rank is to be placed on that duty. Whenever it can be arranged, without serious inconvenience to the service, the members of a court-martial, assembled for the trial of an officer, are to "be of equal if not superior rank to the prisoner, "and in no case but one of necessity is a colonel to "sit upon the trial of a general officer or a captain "on that of a field officer or a subaltern officer on "that of a captain. On the trial of subaltern officers, "two officers of that rank are considered a sufficient "proportion to be detailed as members of the court. "The members of a court may, however, be of any "rank superior to that of the prisoner."

84. As a general rule then you do not put on a court-martial officers of an inferior rank to the officer to be tried?—Certainly not.

85. (*Marquis of Hartington.*) There appear to be regulations affecting the constitution and powers of courts-martial contained in the Mutiny Act, in the Articles of War, and in the Queen's Regulations. The Mutiny Act we know is an Act of Parliament. Will you state what is the exact authority to be attached to the Articles of War?—Your Lordship will find that the 1st section of the Mutiny Act provides that "It shall be lawful for Her Majesty to "make Articles of War for the better government of "Her Majesty's army, which Articles shall be judi-"cially taken notice of by all judges and in all courts "whatsoever." Her Majesty does make Articles of War and issue them. There is a provision in the same section of the Mutiny Act that "No person "within the United Kingdom of Great Britain and "Ireland or within the British Isles shall by such "Articles of War be subject to suffer any punishment "extending to life or limb or to be kept in penal "servitude, except for crimes which are by this Act "expressly made liable to such punishments as afore-"said, or shall be subject, with reference to any "crimes made punishable by this Act, to be punished "in any manner which shall not accord with the "provisions of this Act." That therefore is the limit which is imposed by the Statute upon the Articles of War, but subject to that limit I conceive that Her Majesty, as the head of the army, has the power to make whatever Articles may seem to her to be right for the government of the army.

86. Then what distinction would you draw between the Articles of War and the Queen's Regulations?—No distinction, except one of mere convenience; that is to say, the Articles of War for the most part define military crimes, whereas the Queen's Regulations provide regulations for the duties of officers and soldiers under a great variety of circumstances.

87. But the Queen's Regulations do contain directions as to the practice of courts-martial, do they not?—Yes, all that is a matter of arrangement.

88. (*Mr. Russell Gurney.*) But is there any provision in the Mutiny Act giving the same force to the Queen's Regulations as is given by the first section to the Articles of War?—There is none, the first section of the Mutiny Act says that Her Majesty may make Articles of War.

89. And that they shall be judicially taken notice of by all judges and in all courts whatsoever?—They must be taken notice of, but whether Articles of War derive all their authority merely from the Mutiny Act is another question.

90. (*Lieut.-Gen. Scarlett.*) Would a judge be obliged to take judicial notice of the Queen's Regulations?—No. I think that it will be found that it is generally assumed that there is a customary power in the army of punishment. For instance, the punishment of imprisonment by a commanding officer depends partly upon the Articles of War and partly upon the Queen's Regulations. There is no provision at all in the Mutiny Act for that. It is a very large question.

91. (*Chairman.*) It is the duty of the Deputy Judge Advocate to advise the court in everything relating to the Articles of War and the Mutiny Act, is it his duty to take notice of the Queen's Regulations?—Certainly.

92. He has to advise the court in all matters of that kind?—Yes, and beyond that, in all matters of law.

93. I understood you to say that his duty is not only to sit as the adviser of the court in case of necessity, but that it is his duty to interfere if he sees anything going which is inconsistent with the Articles of War, or with the Queen's Regulations, or with the Mutiny Act?—Or with due and customary course.

94. Has he ever to address the court?—He has to sum up the evidence at the close of the case.

95. At what period does he sum up the evidence?—Just as at an ordinary trial before a civil court.

96. Does he sum up the evidence for the prosecution before the defence commences?—He waits till the close of the case when all the evidence is taken, and then his address would be somewhat like that of a judge to a jury, taking into account the difference between the relation of a judge to a jury and that of the deputy judge-advocate to the members of the court, who are sometimes his equals, and in some cases his superiors.

97. What is the province of the prosecutor; does he appear in the light of the Attorney-General in a case for the Queen?—It is difficult to give a direct answer to that question, because, as you have heard, there is no provision made for the appointment of a prosecutor, and his duty seems to be differently regarded in different districts. He does to a certain extent conduct the prosecution; that is to say, he examines the witnesses for the prosecution, and if there is any application to be made to the court, say for an adjournment in the interests of the prosecution, or anything of that kind, he is the officer who has that part of the case to conduct.

98. Does he make any address?—He may if he likes, and in graver cases he frequently does. I know that many general officers think that it is the duty of the court to take care that sufficient evidence is adduced for the investigation of the case, and if a case miscarries by reason of insufficient evidence for the prosecution I have often seen it made a matter of observation by the revising officer that the court were remiss in their duty in not calling certain evidence. One would say according to ordinary notions that was the duty of the prosecutor, and that it would be advantageous, as he may know all the circumstances beforehand, and the court cannot, that it should be his duty to take care that all the necessary witnesses are present.

99. You say that it is not invariably the case that there is a prosecutor?—There is always a prosecutor at a general court-martial, I should say, and I believe always at a district court-martial, but I should think that his duties were oftentimes very slight.

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100. Has he the power of cross-examining the witnesses for the defence?—Yes, certainly.

101. Has he all the powers given to a counsel in the courts of civil law?—Yes.

102. At what period in the inquiry does he address the court?—The rules as to addressing the court are practically the same now as the rules for counsel at the trials of prisoners at the assizes. That is now provided for by the Queen's Regulations, Article 772:—"With a view to regulate and render uniform the "procedure of general courts-martial in respect to "addresses to the court from the officer conducting "the prosecution and from the prisoner the following "instructions are also to be observed:—The officer "conducting the prosecution is to be allowed an "opening address. At the close of the evidence for "the prosecution the Deputy Judge Advocate will "ask the prisoner if he intends to adduce evidence. "If the prisoner then replies in the negative the "prosecutor will proceed to address the court a "second time, for the purpose of summing up his "evidence, after which the prisoner may address the "court in his defence. At the conclusion of his address the Deputy Judge Advocate will in open "court sum up the case to the court. If, in answer "to the Deputy Judge Advocate, the prisoner states "that he intends to adduce evidence he may open his "case with an address before calling his witnesses. "At the conclusion of the evidence he may again "address the court, after which the prosecutor will "be entitled to a reply. In those special cases where "evidence is allowed in reply, the second address of "the prisoner is to be made after such evidence, and "immediately before the prosecutor's reply. The "address in open court of the Deputy Judge Advocate summing up the whole case is to follow the "prosecutor's reply. After the Deputy Judge Advocate has spoken, no other address is to be allowed, and the court will retire to consider its finding."

103. Is the prisoner entitled to any legal assistance in his defence before the court?—I believe the rule is that a court-martial will not hear any one except the prisoner. They allow, I believe, where there is a written address a friend, generally a brother officer, to read such address, but no legal gentleman is allowed to raise his voice in court. At the same time it is permitted to a prisoner to have the assistance of any legal gentleman whom he chooses to employ, and that gentleman sits, I believe, near him, and communicates with him, and suggests various questions and points in the defence. He is a silent adviser.

104. What power has the prisoner of cross-examining the witnesses for the prosecution?—The prisoner is entitled to cross-examine in the ordinary manner. The way in which the questions are put is different from that which is in use elsewhere, but subject to that the prisoner is allowed to conduct the cross-examination as he chooses.

105. Have the prisoner and the prosecutor an equal power of cross-examination?—Yes.

106. Equal in manner?—Yes.

107. They are both restricted by the same regulations, are they not, as to the mode in which they shall conduct their questioning?—Yes.

108. And that I believe is invariably through the president?—I have never been present at a court-martial, but I believe the course is this. If a witness is being examined for the prosecution, the prosecutor writes his question upon a slip of paper, and hands it to the president. The president, if he approves of it, hands it to the Deputy Judge Advocate, whose duty it is to take a record of the proceedings. The Deputy Judge Advocate either files it, which is the shorter way of doing it, or else he copies down the question in the proceedings, and having done so he reads the question to the witness. The witness answers it and he takes down his answer. It would be in the same way with regard to any question asked in the cross-examination.

109. Is the prisoner called upon for his defence immediately after hearing the evidence for the prosecution?—He is called upon for his defence, but it is usual to grant an adjournment if he applies for I believe that very often the greatest indulgence is given in that respect. The court sometimes adjourns for several days in order to enable a prisoner to prepare his defence.

110. And he is obliged to proceed with the cross-examination of each witness as he gives his evidence?—He is not. It is more or less customary for a prisoner to ask to be allowed to defer cross examination until his defence, which I think is not a very convenient arrangement. He, perhaps, most commonly asks the questions at the time, but it is not uncommon for a prisoner to ask to be allowed to defer his cross-examination.

111. (*Mr. Russell Gurney.*) Is that always allowed?—I think always, in fact I think it is done without any special application or permission.

112. (*Chairman.*) When the trial is over does the Deputy Judge Advocate remain in the room and consult with the court?—The Deputy Judge Advocate is regarded for many purposes as a member of the court. He does not vote, but I believe he is always present at their proceedings for the purpose of assisting in the judgment.

113. When the court has heard the evidence on both sides, would the Deputy Judge Advocate think himself justified in advising the court as to the guilt or innocence of the prisoner, and as to the extent of the punishment which should be awarded?—I would rather that Colonel Laye, who is a Deputy Judge Advocate, should describe to you exactly what takes place when the Court retire to consult. I have no doubt that they would in all cases mention to him the sentence which they desired to pass in order that they might get his opinion as to the legality of it.

114. But would the Deputy Judge Advocate think himself justified, supposing that the officers of the court awarded a particular punishment, in advising that the crime deserved a higher or a lesser punishment?—I should think that he probably would not express any opinion upon that unless he was specially consulted. Although his duties are defined here, this is only a new regulation, and therefore the limits of his duties are still a little uncertain.

115. Is it the duty of the Deputy Judge Advocate to take any part in the proceedings in defence or in advice of the prisoner?—The regulation on that point is this: "In all cases where a prisoner is undefended "the Deputy Judge Advocate is to take care that the "prisoner does not lose any privilege that the law "allows him in the conduct of the trial."

116. Under that order would you think yourself justified as Deputy Judge Advocate, if the prisoner had no other friend in the court, in pointing out any advantage that he might get in the cross-examination of the witnesses?—I think it would depend very much on the circumstances. It is something like the position of a judge when a prisoner is undefended. He would say, "Prisoner, have you no questions to ask this "witness?" and no doubt the Deputy Judge Advocate, in addressing the court, would call attention to the circumstances which seemed favourable to the prisoner, probably with more detail than he would if the prisoner had been regularly defended. But it is very difficult to define exactly what the duty of the Deputy Judge Advocate is under those circumstances.

117. (*Mr. Russell Gurney.*) You spoke of the counsel as being the silent adviser of the prisoner; is it as a matter of right that he should have counsel at all?—It is a matter of custom.

118. Are there not cases in which counsel have been told that they must retire?—I am not aware of any.

119. (*Lieut.-Gen. Scarlett.*) Has not every prisoner a right to legal advice if he has the means to pay for it?—I have no doubt we should so advise if we were asked, but we never have been asked.

120. Have you ever known it refused?—No.

121. If the prisoner has legal advice does it make

any difference in the appointment of the Judge Advocate?—It may do so: the Deputy Judge Advocate, who is a military officer, may obtain permission to have legal assistance in the shape of a barrister to act as his silent adviser, and similar legal assistance may be furnished to the prosecutor. That is not very often done, but it is done in cases of importance; for instance, I may cite the Jamaica case, where two officers were tried on very serious charges. Mr. Gibbs, a barrister, was sent out to assist the Deputy Judge Advocate, and attended the trial, and at the same time the prosecutor received the assistance of the attorney-general in Jamaica, whilst the prisoners also employed the assistance of counsel in that silent manner which I have described.

122. (*Mr. Russell Gurney.*) Does the court put any questions to the witnesses?—Any question they think right.

123. Upon any point which they think requires clearing up they put questions?—Quite so.

124. In the same way as a judge in a civil court?—Quite so.

125. (*Chairman.*) Do the members of the court put their questions through the president?—I believe all questions are put through the president. In the proceedings it is simply put "*By the Court.*"

126. Is the same procedure adopted throughout as to the questions being written on paper?—I could not answer that as to the questions put by the court.

127. (*Mr. Whitbread.*) In what way is the court constituted; is it constituted by selection?—The president is appointed by the convening officer. The other members of the court take court-martial duty according to the roster, as provided for in the Queen's Regulations.

128. (*Chairman.*) Is a prisoner at the commencement of the proceedings, and if so how long before, furnished with a list of the witnesses that are to come against him?—There is no absolute law upon the subject, but as a matter of fact I think he usually is provided with a list of witnesses a reasonable time before his trial; and in some cases I have known an abstract of the evidence to be given by such witnesses to be likewise furnished to him.

129. It is not a necessity that he should be furnished with one or the other?—I think it is usual to do so. The 744th section of the Queen's Regulations provides—"On general courts-martial it is the duty of the "officiating judge advocate to furnish the accused, "within a reasonable time before the trial, with a "copy of the charge to be preferred against him. "In the case of trial by inferior courts this duty will "devolve on the adjutant. To a soldier who cannot "read the charge is to be read, and, if necessary, "explained by the person who warns him for trial." That is as to a copy of the charge. I do not think there is any regulation with respect to the witnesses.

130. Does that rule apply to other than general courts-martial?—Yes, as to the copy of the charge.

131. It is the practice, then, in a district or a regimental court-martial to furnish the accused with the nature of the charge, or of the evidence that will be brought against him?—With the nature of the charge certainly always, and I should think very often with a list of witnesses.

132. How long before the court sits would that information be furnished to him?—There is no time appointed, but I should think generally ample time is given to the prisoner.

133. Is the prisoner himself obliged to give any notice of the evidence that he will adduce in his defence?—No, but he very often has to apply for certain witnesses to be summoned. I think the usual custom is that the adjutant inquires of the prisoner whether he desires any witnesses to be called, and the prisoner having named the witnesses, the adjutant generally, unless the request seems extremely unreasonable, summons the witnesses.

134. Is there any power at all in the court to summon witnesses for the prisoner?—The Mutiny Act and the Articles of War provide that the witnesses shall be summoned by the judge advocate or the president. But in fact the witnesses are generally military persons, soldiers and so on, and the adjutant or commanding officer of the regiment to which the prisoner belongs generally takes care that they are in attendance without a formal order; but in any case arising where such an order was wanted, of course the president would immediately issue the order. There is a form for the attendance of a civilian witness. The power given by the Mutiny Act really extends to military witnesses as well, but it is not necessary to employ that formal power, because it is generally provided for as a matter of course by the adjutant or by the commanding officer of the regiment to which the prisoner belongs. The 13th section of the Mutiny Act deals with that.

135. You are a barrister, I believe, are you not?—Yes, I am of eleven years' standing at the bar.

136. Is there any difference between the power a prisoner has at a court-martial, and the practice in other courts of law with respect to obtaining his witnesses?—I think in that respect the prisoner has a great advantage before a court-martial, because he has the power of his officers to assist him in getting his witnesses together.

137. But in defending himself before the court, has he all the same privileges in a court-martial that he has in a civil court?—I think he has, subject to this, that of course the efficient power of cross-examination is immensely less under the court-martial system when it has to be done on paper in the circuitous manner I have described; and I suppose he is to a certain extent limited in his address to the court. I mean to say that as a soldier he cannot comment so freely upon the evidence, especially upon the evidence of superior officers concerned in the trial, as a civilian would; and of course he has not the full advantage of counsel; but if you compare it with the ordinary case of a man being tried by a civil tribunal who is not defended by counsel, I do not think there is so very much difference.

138. (*Lieut.-Gen. Scarlett.*) Do you ever recollect a case in your experience of the practice of courts-martial of a prisoner complaining that he had not the privilege of cross-examination?—It would be treated as a most serious blot upon the trial, if any question was refused. We have had occasions where questions put by prisoners to witnesses have been improperly refused by the court, and in such cases it has not been uncommon for the whole proceedings to be set aside.

139. (*Marquis of Hartington.*) Did you refer to the passage in the regulations which defines the duties of the Deputy Judge Advocate?—It is the 771st section.

140. The Deputy Judge Advocate is mentioned in the Articles of War, but his duties or position in the court are not defined there, are they?—No, they are not, except that it is provided that he shall not be prosecutor.

141. The Articles of War state that the Deputy Judge Advocate shall not be prosecutor, but they do not state that there shall be a Deputy Judge Advocate or what he is to do?—They do not state what he is to do.

142. His duties then are defined merely by the Queen's Regulations?—Yes, and the custom of the service.

143. (*Mr. Whitbread.*) In recording any answers, is the prisoner's or the witness's first answer taken down or is he allowed to amend it if he desires to do so before it is finally recorded in the proceedings?—I think there is a reasonable power of amendment given. It would be the same there as anywhere else.

144. You can hardly speak from personal experience on that point?—I cannot.

145. (*Mr. Russell Gurney.*) Would they not put down both?—No doubt they would exercise a discretion about it.

146. (*Mr. Whitbread.*) Cannot the witness demand to have a different answer taken down and recorded

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from that which he gave in the first instance?—I believe as to that the practice is for the evidence of each witness to be read over to him after he has concluded his evidence, and then if he desires any amendment it is either amended, or if it bears a suspicious character then I dare say they would state what it was that the witness desired to be altered.

147. (*Lieut.-Gen. Scarlett.*) At the end of his evidence they would read it over to him and he might always correct what he wished to be altered?—Quite so.

148. (*Mr. Russell Gurney.*) There is a power now given to have a short-hand writer, is there not?—Yes, there is.

149. Has that introduced any change in the mode of examining a witness?—No; except that when the short-hand writer is actually employed I rather doubt whether the Deputy Judge Advocate takes his own note quite so fully, and finally the proceedings are made up of the short-hand writer's note certified by the Deputy Judge Advocate.

150. (*Lieut.-Gen. Eyre.*) Does that supersede the necessity of all the proceedings being written?—It does not at present.

151. Do you thing it might not in some cases have that effect?—I think that is a most important point.

152. (*Chairman.*) When the court has terminated its inquiry and decided upon the guilt or the innocence, and if guilty on the sentence, of the prisoner, how does it proceed to announce that to the prisoner, is he called upon to be present in the court?—I will take the finding first of all; we will suppose that the finding is one of guilty, they do not announce that at all, but they re-assemble and then they take evidence of previous convictions. In that way a prisoner practically knows that he is found guilty to a certain extent at any rate. The court then consults again and passes the sentence and records the sentence, but it is not announced in any form to the prisoner. The court breaks up, the proceedings are signed by the president and are then sent in the case of a district court-martial to the confirming officer. The confirming officer peruses the proceedings and forms his own judgment upon them, and according to that judgment he may take one of several courses.

153. (*Marquis of Hartington.*) Is the confirming officer the convening officer?—Not always. For instance, with respect to all general courts-martial in the United Kingdom, the convening officer is generally the general officer of the district, sometimes it is the Commander-in-Chief; but the confirming officer is the Sovereign. In the case of a general court-martial the proceedings are sent direct to the Judge Advocate-General for submission to Her Majesty. The confirming officer may first of all, if he thinks fit, withhold his confirmation, the result of that being that the whole proceedings are null and void, and the trial naught. No finding is considered a sentence until it is approved by the confirming officer. That is the custom of the service, to some extent regulated by the Mutiny Act and the Articles of War.

154. (*Chairman.*) To what extent is it so regulated?—That would require going into the sections by detail. For instance, there is no provision made in the Mutiny Act that every court-martial shall be confirmed.

155. (*Lieut.-Gen. Scarlett.*) Does the Mutiny Act say that no punishment shall take place until the proceedings of the court-martial are confirmed?—It does in some cases, but not in all. The more general provisions as to confirmation are in the Articles of War. The 123rd Article of War is:—"No sentence "of a general court-martial shall be put in execution "till after a report shall have been made of the whole "proceedings to us; or to the officer commanding-in-"chief; or to some other person duly authorized by "us, under our sign manual, or by warrant granted in "pursuance of authority under our sign manual, to "confirm the same, and until our or his directions shall "have been signified thereupon; and no sentence of "death shall be carried into effect in any of our colonial "possessions until it shall have been approved in our "behalf by the civil governor or person administering "the civil government." That you will observe is confined to the case of general courts-martial. Then the 124th section deals with the detachment general court-martial.

156. (*Chairman.*) In a general court-martial there is no doubt that if the Queen's approval is not signified the proceedings are null and void?—Yes.

157. Is there any similar process in the case of the district court-martial?—Quite so; the general officer must confirm, or else the proceedings are null and void.

158. Supposing that in a district court-martial a prisoner is sentenced to a particular punishment and that sentence is not confirmed by the confirming officer, would that sentence be annulled?—Certainly. The court-martial according to the custom of the service has no power to carry out the sentence. The sentence is carried out by order of the confirming officer. The court-martial is in fact a trying tribunal, it is conducted as it were under the orders of the convening and confirming officer, and no sentence can be carried into effect until it has been approved by the confirming officer.

159. Does that apply to all three courts, the general, the district, and the regimental?—Yes; to every court-martial.

160. (*Lieut.-Gen. Peel.*) Is there not a power on the part of the revising officer to send the finding back to the court-martial to reconsider?—Yes, and that is of great consequence. He may first of all withhold his confirmation altogether, that comparatively rarely happens. He may if he thinks fit approve and confirm, and he would then give orders for the sentence, if any, to be carried out. He may further remit any portion of the sentence he thinks fit, and he has certain powers of commuting the sentence.

161. (*Chairman.*) Will you state his power of commuting sentences?—The power of commuting the sentencing of cashiering belongs to Her Majesty only. Even the Commander-in-Chief in India has no power to commute a sentence of cashiering. A sentence of death may be commuted to penal servitude or imprisonment. A sentence of penal servitude may be commuted to imprisonment.

162. To any period of imprisonment not beyond what you stated just now?—The limit is two years. Then corporal punishment may be commuted likewise to imprisonment with hard labour, or may be commuted to imprisonment without hard labour, and a certain portion of the corporal punishment may be inflicted in the prison; and, lastly, there is power for commuting a sentence of stoppages. Then the confirming officer has the power (this you will find, I think, to be a very peculiar provision, and one of very great importance,) of remitting the case for the consideration of the court, if he thinks that in any respect they have not dealt properly with it. He cannot direct them to take any new evidence, but if he disapproves of the finding he can direct them to reassemble and reconsider their finding. If they think fit they can stand to their former finding, but if they are persuaded by his remarks then they may find otherwise. Then as to the sentence, he may make any observations which he pleases on the sentence, and they will take his observations into consideration and act as they think fit upon them. The case would then come back to the confirming officer, and he would then take any course which he thought necessary, but he could not remit the case a second time to the court. That you will find provided for, by the 14th section of the Mutiny Act and the 163rd Article of War.

163. Does it often happen that on reconsideration of the sentence it is reversed?—Not unfrequently. Revisions occur in only a small portion of trials generally, but it occasionally happens that the sentence is altered on revision.

164. Does the confirming officer when he remits a case to a court-martial state in detail the reasons

which induce him to do so?—He generally states some reasons, and sometimes at length.

165. (*Mr. Whitbread.*) If he withholds his confirmation, what is the position of the prisoner?—He returns to his duty.

166. Can he be tried again for the same offence?—I should think not.

167. You say the proceedings are null and void, but in what way cannot he be tried?—There is a provision as to that in the 14th section of the Mutiny Act. The provision is not very clear, but there is, no doubt, that in a case of that kind he would not be tried again.

168. (*Chairman.*) Is there any appeal from any of the courts to any other tribunal?—I should say certainly not. By the practice of the service, if a man has any complaint he has the power of making it to the general officer at the half-yearly inspection, and in some cases if he makes a complaint to his commanding officer the commanding officer, if he thinks fit, will remit the case to the Judge Advocate-General for his opinion upon the subject, and the Judge Advocate-General gives his opinion, which in almost all cases is at once followed. Every district court-martial is sent finally to the Judge Advocate-General's office for safe custody, and is there perused, and if there is any mistake in law, if the thing is palpably bad, then the trial would be set aside in the form of a letter of advice written by the Judge Advocate-General to the confirming officer. But unless we receive a special application, we should not enter into the question how the balance of evidence was.

169. (*Lieut.-Gen. Scarlett.*) If you thought that the evidence was not sufficient to convict the prisoner, would you not in the Judge Advocate-General's office make some remark?—I am now speaking of the common case in which the proceedings are simply sent to us for safe custody. In these cases we peruse the proceedings, but we do not enter into the balance of evidence. If, however, the evidence were absolutely insufficient in law, or if there were any irregularity, we should take notice of that. I think that you will find that the majority of letters written in such circumstances upon district courts-martial are chiefly with reference to future guidance.

170. (*Chairman.*) But is it not the duty of the Judge Advocate-General to advise Her Majesty when he thinks that the evidence has not been strong enough to convict the prisoner?—The Judge Advocate-General when he submits the proceedings of a general court-martial to Her Majesty has, the duty of advising whether the proceedings are legal or not. If there was no evidence in law upon the charge; if the charge proved to be illegal, either in form or in substance, he would advise Her Majesty upon that that the proceedings ought not to be confirmed; but the Judge Advocate-General has little to do, generally speaking, with the weight of evidence; nor has he anything to do with the weight of punishment, provided that the sentence is a legal one upon the charge.

171. He has nothing to do with the discretion of Her Majesty, and it is only as a legal adviser that he gives his opinion?—I should think so.

172. (*Lieut.-Gen. Scarlett.*) Have there not been many instances in which the findings of courts-martial have been sent up to the Judge Advocate-General where the evidence has been found not to have been sufficient to convict the prisoner, and where the prisoner has afterwards been released?—Certainly. From time to time it has happened that the proceedings of a trial are specially referred to the Judge Advocate-General, and if he sees that there is no evidence, as a matter of right the man is at once released. In a number of cases also a military officer thinks it advisable to refer to the Advocate-General what the balance of evidence is. In all those cases the Judge Advocate-General, as I understand it, is simply the adviser of the military officers. He answers any question of that kind which is put to him, and if he is of opinion that the balance of evidence is in favour of the prisoner, he would say so, and the general officer would follow his advice.

173. (*Chairman.*) Have you in your office any record of the cases in which confirmation has been withheld?—We have from time to time cases of this kind; the trial is held; the confirming officer reads the proceedings and disapproves of them, and he writes at the end of them, as his minute, "Disapproved and not confirmed." The proceedings of such district courts-martial are like those of other district courts-martial sent to us, and we read them, and keep them.

174. Could you furnish the Commission with a list of the findings of general courts-martial, say, for the last five years, giving in distinct columns those which have been confirmed and those which have not been confirmed?—Yes. The only case that I can call to mind at this moment of a finding not having been confirmed, and which occurred before I entered the office, is the case, I think, of Lieutenant Robertson, who was tried at Dublin. That is the only one I can recollect, and I have not even perused that. There was also Drum-Major Butler's case. There the finding was set aside, I think, chiefly upon the ground of the evidence.

175. I collect from what you say that they are quite exceptional cases where the confirmation has been withheld?—Quite so.

176. Can you say the same with regard to district courts-martial?—Certainly; the vast majority of trials are free from any objection.

177. The findings of regimental courts-martial do not come into your office, do they?—No.

178. Into what office do they come?—They are kept with the regimental documents.

179. Are the regmental findings always kept with the regimental documents, or are they sent to the general officer of the district where the regiment is quartered?—I cannot answer that question with certainty. I believe they are always kept with the regiment, and there is I think a certain return made of the regimental courts-martial to the superior authority.

180. I think you stated that there is no appeal from a regimental to a district court-martial, or from a district to a general court-martial?—There is certainly no appeal as of right, and I should say that in practice there was none. I believe I have heard of cases in which men were ordered for trial by a regimental court-martial, and then they requested a trial by a district or general court-martial, and that request was granted; but when a man has been once tried, even by a regimental court-martial, it is quite clear that he cannot be tried again for the same offence. The Judge Advocate-General is generally to my mind the adviser to the military authorities, rather than an appellate judge. The cases are always in fact submitted to him by a superior authority; his decision is not a public decision: it is in the shape of confidential advice to a military authority; neither is it absolutely final, because in certain cases his opinion may not be followed by the military authority, though in the great majority of cases it is.

181. (*Mr. Mowbray.*) But though he is the adviser the advice is given with such authority that it is almost universally followed, is it not?—That is so; but the difference between a real court of appeal and an adviser may sometimes be of great consequence. For instance, both parties are not equally consulted, nor has a man always an opportunity of stating what he requires. There is no regular form of proceeding. It is something like the appeal to the Home Secretary with respect to convictions which have taken place before the ordinary tribunals.

182. Can you mention a single instance in which the advice of the Judge Advocate-General, that proceedings at a trial should be set aside, has been disregarded by the military authorities?—Certainly not.

183. (*Lieut.-Gen. Peel.*) But the advice of the Judge Advocate-General is confined strictly to the legality and not to the justice or amount of the sen-

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tence, and therefore there is no comparison between that and the action of the Home Office?—Quite so, except in cases where his opinion on such points is specially asked.

184. (*Mr. Mowbray.*) But his advice is often taken and his opinion acted upon with respect to the weight of the evidence, is it not?—That is so. He does not advise upon that I understand, unless he is specially requested so to do.

185. He very often volunteers advice to generals commanding in different parts of the empire merely upon reading the proceedings of a court-martial and finding certain irregularities in them?—Yes, if there be irregularity, but not upon the mere weight of evidence.

186. (*Lieut.-Gen. Scarlett.*) But upon any matter of law the Judge Advocate-General's opinion is taken and acted upon?—Yes.

187. (*Chairman.*) What should you say was the character of most of the crimes which have passed the Judge Advocate-General's office in your experience?—I have never classified them, but I have no doubt the most common would be the minor form of insubordination, using insubordinate words to non-commissioned officers.

188. Has it occurred to you to inquire into the nature of the cases of insubordination?—No; and I confine myself necessarily to general and district courts-martial. I have never reckoned it up, but I think that you will find that the majority of cases consist of insubordination. It must be remembered however that you do not try a simple case of drunkenness by a district court-martial; you try habitual drunkenness by that tribunal; so that I can only compare insubordination with habitual drunkenness.

189. Have you made inquiry into the cases of insubordination which come through your office?—I have seen every particular case.

190. Could you ascribe to one general cause more than to another the cases of insubordination?—We have a great number of cases in which insubordination arises from drunkenness.

191. Do you believe that a very great majority of the cases of insubordination arise out of drunkenness?—I should be sorry to give an opinion upon that. I should think that probably it is so, but a commanding officer would give you much better evidence upon that than I could, because, for instance, the charge of insubordination is laid without any reference to the offence of drunkenness. The drunkenness, perhaps, never appears before the court, or if it appears it is treated as immaterial, or nearly so. To return to the subject I was speaking of just now, with respect to the advice which the Judge Advocate-General gives upon submitting the proceedings of a general court-martial to the Queen, it is really for the Judge Advocate-General to state the course taken much more than for myself. The trial is carefully read and the Judge Advocate-General forms an opinion upon the evidence. I am perhaps right in saying that what the Judge Advocate-General usually does is this, that he does not interfere upon a matter of evidence unless he feels it abundantly clear that the case has miscarried, and that the balance of evidence was decidedly contrary to the finding of the court. Of course the Judge Advocate-General, like every other high officer, has great discretion as to the advice which he would tender to Her Majesty, but speaking generally he is merely the legal adviser.

192. (*Mr. Russell Gurney.*) Would he act much in the same way as a superior court would act in ordering a new trial if the balance of evidence was decidedly contrary to the finding?—Just so. I think he would be even more reluctant than the court to interfere.

193. (*Mr. Whitbread.*) Can he order a new trial?—He can recommend a revision.

194. (*Mr. Russell Gurney.*) Can he equally do so whether the verdict has been favourable or unfavourable to the prisoner?—Yes, he can do so in either case; whatever the finding, the revising officer, if he disapproves of it, may call upon the court to reconsider it.

195. (*Marquis of Hartington.*) The Judge Advocate-General has not the power to send back the proceedings himself, has he?—No, he is simply the minister advising the Sovereign as the confirming authority.

196. Does a Commander-in-Chief under any circumstances summon a court-martial himself?—He has the power under a warrant.

197. But practically do you know any cases in which he does it?—I have no doubt that he did it in Colonel Crawley's case, but I could not say that he did. Generally speaking a general court-martial is convened by the district officer.

198. (*Mr. Mowbray.*) What is the practice with respect to Indian courts-martial?—The Commander-in-Chief in India has greater power than any other officer having general command (except the officer commanding-in-chief in China). He has the absolute power of determining all general courts-martial held upon commissioned officers under his command. Every other general officer, though he may try a commissioned officer, cannot finally dispose of a case in which a commissioned officer has been sentenced to death, penal servitude, or cashiering, all such cases being sent home for the consideration of the Sovereign. In India the presidential commanding officers hold the usual powers which are given to general officers holding command; but in the case of trials of commissioned officers which result in a sentence of death or penal servitude or cashiering, they have to refer them for the consideration of the officer commanding-in-chief in India. Besides that, in India, they have the system of district deputy judge advocates. In fact, the home deputy judge advocates came from India; we followed the Indian practice and it has been found I think to be a very great convenience. I do not think I have anything further to say about India, except that there is a power under the Mutiny Act to try soldiers for civil offences, if the soldier is 120 miles away from any of the presidencies. They have tried men for capital offences in that way and carried out capital sentences.

199. (*Lieut.-Gen. Scarlett.*) Is there any power of appeal to the Judge Advocate in England from the Indian courts-martial?—The district courts-martial are held in India and are finally settled in India, and so likewise are all the general courts-martial, but at the same time cases are occasionally remitted home to us by the officer in command there. The Judge Advocate-General, as I have said, is the adviser of the military authorities, and any officer in command may at any time remit any case to him for his advice.

200. (*Mr. Mowbray.*) His advice is also taken from time to time by the Commander-in-Chief, is it not, in respect to any matter?—Yes.

201. (*Lieut.-Gen. Peel.*) Has not the Commander-in-Chief in India the power of confirming courts-martial without reference to the Commander-in-Chief at home?—He has, as I stated; but after he has settled the matter it is sometimes re-opened.

202. In case of sentence of death he has the power of having an officer shot?—Yes.

203. (*Marquis of Hartington.*) In what way does the case come home?—By the Articles of War the proceedings of the trial are remitted home to be deposited in the Judge Advocate-General's office. If an important case arises the Commander-in-Chief in India acquaints the Commander-in-Chief here with it, and most probably furnishes him with documents relating to it, correspondence and the like. Then the Commander-in-Chief here, if he wants to go into the matter, sends over to the Judge Advocate-General's office for the proceedings of the trial. He has the proceedings, and then upon that he, if he thinks fit, submits a case to the Judge Advocate-General for his advice.

204. (*Mr. Mowbray.*) Upon receipt of proceedings from India does not the Judge Advocate-General notify

to the Horse Guards the proceedings?—Yes. The notification is a mere return, in ordinary cases it is sent and there is an end of it. It is, I believe, a mere formal statement of the charge, the finding, and the sentence. I am not sure whether the observations of the revising officer are stated or not, but it is generally treated as a mere formal document, and in fact it is never used hereafter in any case, because if any case arises you of course refer at once to the original proceedings.

205. (*Lieut.-Gen. Peel.*) In the case of Captain Jervis, to whom were the proceedings sent from India in the first instance?—The proceedings were remitted from India to the Judge Advocate-General's office here, according to the Articles of War.

206. On arriving here what was the course pursued upon that occasion?—To the best of my recollection what happened was this: His Royal Highness the Commander-in-Chief sent over for the proceedings to see them. Having perused them, he then sent over so much of the case as he thought fit for the opinion of the Judge Advocate-General.

207. Then the action took place through the Commander-in-Chief's view of the case, and not through the Judge Advocate-General?—Certainly. The case was finally settled when it came to England, and it was only a re-opening of the case.

208. I thought you stated before that the Commander-in-Chief in India has the power of confirming without any revision?—So he has, but in that particular instance the case was re-opened.

209 (*Mr. Russell Gurney.*) It was not the whole matter that was re-opened, but certain instructions were sent out?—Yes.

210. (*Mr. Mowbray.*) The Commander-in-Chief in India has the power to confirm or remit home?—Yes.

211. If he confirms the thing is finally concluded as far as law goes?—Yes.

212. Then after he has confirmed the proceedings are sent to the Judge Advocate-General to be deposited?—Yes, by the officer acting as Deputy Judge Advocate at the trial, or the Judge Advocate-General in India.

213. And then upon receipt of those proceedings the Judge Advocate-General communicates to the Commander-in-Chief a short notification of what has passed, stating that A. B. has been tried, and so on?—Yes, but not with a view to any further proceedings.

214. It is the duty of the Judge Advocate-General to bring under the notice of the Commander-in-Chief at home the proceedings that have taken place?—To that extent quite so.

215. Then the Commander-in-Chief may, if he pleases, send for those proceedings and ask any questions of the Judge Advocate-General with reference to those proceedings?—Quite so.

216. (*Lieut.-Gen. Peel.*) But in the first instance the Judge Advocate-General expresses no opinion to the Commander-in-Chief?—No.

217. (*Marquis of Hartington.*) Is it part of the Judge Advocate-General's duty even to read those proceedings?—No, they are considered finally settled.

218. (*Mr. Mowbray.*) They are finally settled unless there is an appeal?—There is practically that appeal, but really the whole thing is in form, and I think also in substance, advice given by the Judge Advocate-General to the Comanmder-in-Chief upon his requisition. In the case to which I refer we never advised upon the whole case; we were never asked to advise upon the whole case. In all those cases the Judge Advocate-General expresses no opinion except as he is requested by superior authority.

219. That superior authority, the Commander-in-Chief we will say, may ask the opinion of the Judge Advocate-General upon the whole case if he thinks fit, or he may confine his request to his opinion upon certain parts of the case?—Yes.

220. (*Chairman.*) When that case to which you have alluded came over from India and was deposited in the Judge Advocate-General's office, was it by the Commander-in-Chief's request, or by the suggestion of the Judge Advocate-General that it went over from the Judge Advocate-General's office to the Commander-in-Chief?—In that case the proceedings would be sent over to the Horse Guards upon a mere message received from them. It is a very common thing for the Horse Guards to want the proceedings of a certain trial, they send over to the Judge Advocate-General's office and get them, and return them. There is no doubt a note of their being sent out and of their return, but in a case like this the Commander-in-Chief would simply send to the Judge Advocate-General's office and ask for the proceedings.

221. (*Mr. Russell Gurney.*) Is it a fact that officers are occasionally dismissed the service without a court-martial?—Yes, that is by Her Majesty's prerogative. It is generally done in a quieter way; the officer is told that he must retire or else more severe measures will be taken with him.

222. As a matter of practice is that done without a court-martial when the officer requires a court-martial?—Nobody has a right to be tried by court-martial.

223. But as a matter of practice would a court-martial always be granted before an officer was dismissed if he demanded it?—I should say that that depended upon circumstances.

224. You think that as a matter of practice it would not occur often, and that in some cases the officer would be allowed to have a court-martial before he was dismissed?—It would very much depend upon the nature of the charge.

225. What would be the practice in the case of a charge, for instance, affecting the honour of the officer?—I have hardly had sufficient experience to answer you satisfactorily. It is admitted that it is the undoubted prerogative of the Crown to dismiss any officer without reason assigned, but it is not usual to exercise the prerogative without grave cause. In cases where a court-martial seemed to be a proper tribunal for examining the charge, supposing it was a definite charge, no doubt the court-martial would be granted; but supposing an officer, though he had never committed any great crime, was a thoroughly worthless officer and man, and it was desirable to get rid of him; you could not try him on any definite charge, and yet you must, for the benefit of the service, get rid of him. In that case I have no doubt that if he demanded a court-martial it would be refused.

226. (*Lieut.-Gen.-Peel.*) If an improper person commanded a regiment he would be removed if necessary without court-martial?—Quite so.

227. (*Lieut.-Gen.-Eyre.*) You have mentioned that the Royal Artillery are placed in the same position as the Guards with regard to courts-martial, and you stated that artillery officers can only be tried by their own corps, is that so?—The words are a little vague; they are these, "the officers of artillery shall "for differences arising amongst themselves, or in "matters relating solely to their own corps, have "court-martials composed of their own officers." No doubt in practice artillerymen are often tried by a mixed court.

228. (*Mr. Whitbread.*) Is it not the practice sometimes to sentence men to solitary confinement?—Yes, there is a provision made for that, with a limit appointed for the solitary confinement, in the 126th Article of War.

229. If the man is to be discharged from the service it is also customary to send him to a civil prison to have that sentence carried out, is it not?—Yes, that is so by regulation.

230. Are there any means in the civil prisons of carrying out a sentence of solitary confinement, is it a punishment known in civil prisons?—I cannot tell you that.

231. (*Chairman.*) You mentioned in the course of your evidence that a general court-martial could only award imprisonment for two years; that court-martial

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can award a punishment of penal servitude, can it not?—A general court-martial can do so.

232. For what period?—For any period whatever, but it is limited in this way, it must not be for less than five years; that is in consequence of the Penal Servitude Act.

233. That is under an Act of Parliament is it not?—There is a Penal Servitude Act which says that no sentence of penal servitude shall be less than five years, and that is incorporated in the Mutiny Act.

234. (*Marquis of Hartington.*) You mentioned that it was difficult to draw a distinction in some cases between civil and military crimes, and that crimes which are really properly civil are sometimes treated as military crimes; with whom does the decision rest whether a crime is military or civil, and whether it should be tried by court-martial or by a civil court?—If a man commits an offence he is brought before his commanding officer. Supposing that it is an attempt to murder a comrade, that is an offence under the Articles of War as being a felony, and the commanding officer may then apply to the general officer to try him by district court-martial if he likes. If the general officer thinks fit to make the order the man may be tried and sentenced to two years' imprisonment, but he cannot be sentenced to anything more. On the other hand if the general officer thinks that the prisoner ought not to be tried by a military court, but ought to be handed over to the civil power, he then gives the necessary order for that purpose, so that in a case of that kind it would be no doubt the general officer who would determine the point.

235. Is the Judge Advocate-General ever consulted whether a crime should be treated as a civil or as a military crime?—Certainly; I can remember an application being made to the Judge Advocate-General as to his opinion whether a man should be tried for attempting to murder his officer. That was more than a mere felony, that was a capital offence under the Mutiny Act, so that the military authorities had the necessary power of punishment in their own hands without handing the man over to the civil power.

236. (*Lieut.-Gen. Eyre.*) But a commanding officer may hand a man over to the civil power for a civil offence immediately?—Certainly; but men who steal from their comrades are almost invariably tried, I should say, now by courts-martial; that is under the 81st Article of War.

237. (*Lieut.-Gen. Scarlett.*) But generally speaking would you not say that offences which were not purely military must be tried by the civil power, such as murder or assault on any of the inhabitants?—It would be so generally as a matter of fact, certainly.

238. (*Marquis of Hartington.*) But the civil authorities have the power of course if they think an offence has been committed which ought to be tried by a civil court to demand that it be so tried?—Yes, there can be no doubt of that; that is provided for by the 76th section of the Mutiny Act. For instance, two men who had murdered their officers within the last five or six years were each of them tried before the civil tribunal.

239. (*Viscount Eversley.*) Was there any previous inquiry before a coroner which justified the claim of the civil authorities to deal with the prisoners?—I am not sure, but I think so; I am pretty sure that there was a coroner's inquest upon Captain De Vere, who had been murdered by a soldier.

240. (*Chairman.*) Have you any suggestions to offer to the Commission for an improvement, either in the constitution or in the practice of courts-martial?—I feel considerable reluctance in answering that question, because I am a civilian; I only see these things on paper; I only partially see how they are worked, and then there are paramount considerations of military discipline of which I am an insufficient judge.

241. In the course of your experience in the office of the Judge Advocate-General have any complaints been made, or have you heard of any complaints of the practice or constitution of courts-martial?—We have had special complaints from time to time from persons who have been tried.

242. Of what nature are the complaints which you have heard?—I should think generally they were complaints of having certain questions refused, and sometimes of taking evidence which ought not to be taken.

243. Has that been in the way of a formal appeal to the Judge Advocate-General?—No; according to my view there is no formal appeal to the Judge Advocate-General.

244. In what form then have such complaints come under your notice?—Take Paymaster Cunningham's case for instance, he made many complaints at his trial. He afterwards had an adviser of the name of Mr. Tayler, who I think wrote to the Secretary of State for War, and wrote also to His Royal Highness. Those letters were in due time submitted by the Commander-in-Chief to the Judge Advocate-General, and in that way we took cognizance of them.

245. Were those complaints of what occured during the course of the trial and not against the system?—Persons cannot complain against a system, they are obliged to submit to that whatever it may be.

246. I understand you to say then that you are not able to advise this Commission as to any alteration in the practice of courts-martial?—I would not say that; but I should wish it to be borne in mind that I am a civilian, and that I admit that considerations of military discipline, which I am imperfectly acquainted with, must be paramount in determining the wise course. I must also add that a great majority of trials by courts-martial are from their simplicity perfectly right. Almost all crimes are simple, but military crimes are especially simple. The procedure in a great majority of cases works right results; but I think as soon as you get to a difficult case, and especially to the trial of an officer, the system then begins to be inadequate to the work required of it.

247. In what way?—In several ways, but I think one point of the greatest importance is the delay. If an officer is tried on a heavy charge, his case generally lasts a long time. For instance, I may mention Captain Jervis' case, which lasted a month. I think that in the case of each of the officers who were tried in Jamaica the trial lasted two months. Paymaster Cunningham's case also occupied a long time. I think that you will find that the protracted nature of a trial by court-martial in particular cases requires great consideration. That arises in a great measure from the system of procedure which I have described. It arises from the system of written addresses and written questions. Of course the difference in point of time between asking a witness a direct question *vivâ voce*, and writing it down and handing it up to the president who reads it, and then hands it to the officiating deputy judge advocate who writes it down, is enormous.

248. Have you any knowledge of the origin of that practice?—I have no knowledge of its origin, but I conjecture the reason of it. The reason of it is that there must be a full record of the proceedings for the confirming officer.

249. (*Mr. Russell Gurney.*) That you would have with a shorthand writer?—You would.

250. (*Chairman.*) Do you think it necessary to continue that practice now that the proceedings of courts-martial are taken down by shorthand writers in the same manner as they are in courts of civil law?—Where there is a shorthand writer I think that system is of no use at all, but is a mere incumbrance.

251. With regard to district courts-martial and regimental courts-martial, the shorthand writer is not necessarily present?—No, there is no shorthand writer. In fact, you never do have a shorthand writer without the special permission of the Secretary of State for War, because it is a matter of expense.

252. Do I understand you to say that it is not absolutely necessary that a shorthand writer should be present at a general court-martial?—Certainly

not. There is a provision in the Mutiny Act that a shorthand writer may be employed, but he cannot be employed without the special authority of the Secretary of State of War.

253. Is it your opinion that it would tend to shorten proceedings in courts-martial, regimental, district, and general, if the same rule applied to all three, that a shorthand writer might be employed?—No doubt it would save time, but it would be a question of expense in regimental and district courts-martial, and I think that there is not the same necessity for it, because there the cases are so simple.

254. (*Maj.-Gen. Horsford.*) Would you then allow every member to ask a question, or must every question go through the president?—I think the majority of questions would always be asked by the prosecutor and the prisoner. The court would have the supplementary power of asking any questions which it thought necessary.

255. (*Lieut.-Gen. Scarlett.*) Do you see any advantage at all in the present system when a shorthand writer is present?—I see no advantages and I think there are great disadvantages, for instance, the efficient power of cross-examination is destroyed.

256. (*Mr. Russell Gurney.*) The power to have shorthand writers is not confined to general courts-martial, is it?—It is not; I think that you will find that the great majority of trials by courts-martial are disposed of in a single day, even in the case of district courts-martial; and therefore the matter of saving an hour or two is not of much consequence; but when you come to a heavy case, like Captain Jervis' case or that of the officers in Jamaica, or Paymaster Cunningham's case, the present system entails an enormous delay. Among other things you have to ask the opinion of the court upon the evidence at the expiration of a month, or possibly when it is returned by the revising officer at the expiration of six weeks, and of course this makes great difficulties in arriving at a proper result.

257. (*Lieut.-Gen. Eyre.*) You would not like to give an opinion upon the practice of regimental courts-martial?—No, I would not.

258. (*Mr. Mowbray.*) Do you not think that the number of 13 is unnecessarily large for a general court-martial?—It seems to me unnecessarily large, but it is really a military question.

259. It is proposed to alter it in an Act of this year, and to reduce it to nine; what will be your view as to such an alteration?—I think that would be a good alteration.

260. In the Jamaica trials we were only authorized to employ seven, and we found those cases as well tried as any others?—Quite so.

261. (*Chairman.*) In the Jamaica case what was the authority for sending out seven officers instead of 13?—The Articles of War.

262. By which Article of War was that?—The 106th, which enabled a general court-martial in Jamaica to consist of seven officers.

263. (*Lieut.-Gen. Peel.*) But there was this peculiarity about that, that the members of the court were sent out directly from England, and that they were not selected from officers upon the spot?—That was so.

264. (*Mr. Mowbray.*) With regard to the kinds of courts-martial, it has been suggested that one kind should be done away with; what would be your view upon that point?—At present you may take it that there are only three kinds, the general, the district, and the regimental courts-martial. I speak with deference to military authorities, but it seems to me that many private soldiers who are tried by general courts-martial might be tried by district courts-martial with convenience, and that it is not really necessary to resort to a general court-martial unless the offence requires such a sentence as can only be passed by that tribunal. I think that that would get rid of a number of general courts-martial which are of the most ordinary kind.

265. (*Maj.-Gen. Horsford.*) Have you not found that that has been done very much of late years?—It has.

266. (*Mr. Mowbray.*) Would it not be desirable that there should be some classification of offences, and that it should be more distinctly defined what offences are cognizable by general courts-martial, and what by district courts-martial?—I think such a classification very desirable, but it would require much consideration. Thus striking an officer is of course one of the gravest offences which a man can commit, yet under circumstances it might be proper to try the offender by district court-martial only. Striking a non-commissioned officer is a capital offence under the Mutiny Act, but I think that most officers would have a case of that kind tried by district court-martial.

267. Would it not be desirable that there should be some authority in London which should decide by what court-martial offences of that dubious character should be tried?—Yes. My own view would be (but I mention it with deference) that no general court-martial should be held without the sanction of the Commander-in-Chief. It seems to me that district courts-martial might deal with the great majority of the cases.

268. Then in every case of a general court-martial application should first be made to the Adjutant-General for the sanction of the Commander-in-Chief?—Yes.

269. (*Maj.-Gen. Horsford.*) What would you do abroad, in the West Indies, for instance?—A general court-martial would be held there as at present by the order of the general officer on the spot.

270. (*Mr. Mowbray.*) With respect to the preparation of the charges, is it not an objection at present that charges for a general court-martial have to be prepared at the Judge Advocate-General's office, and that if objections are taken to the form of those charges the Judge Advocate-General has himself to decide whether those charges are or are not good?—Yes. It is no doubt of consequence that the charges should be carefully settled by legal authority, and therefore by some such authority they must be settled; but the present practice is no doubt open to the observation that the Judge Advocate-General at first settles the charges, and then, if any case arises upon the trial as to the validity of those charges, his opinion is asked upon them. In fact, as settling the charges he acts as prosecutor.

271. Would it not be advisable to attach to the Adjutant-General's office, or to some other department in London, an officer who might act as a "clerk of indictments" to frame the charges, so that the Judge Advocate-General might afterwards approach the matter with a practically unbiassed and unprejudiced mind?—I think that it would be very advisable. I also think it is of some consequence that the duties of the prosecutor should be more clearly defined, and that especially he only should be charged with the prosecution; that he should be charged to have the necessary witnesses in attendance, and that he should be charged with the proper examination of them.

272. (*Chairman.*) To whom would you recommend that the authority should be given to appoint the prosecutor?—I think the convening officer would be the proper person to name the prosecutor; but usually it might be convenient in a district court-martial to have the adjutant of the regiment, and in a general court-martial to have the commanding officer of the regiment, as the prosecutor. I do not see that a strict rule would be necessary, but probably that would be found a convenient arrangement, as they are the officers in charge and know all the circumstances.

273. (*Mr. Mowbray.*) Is it not a highly objectionable practice that the witnesses should be selected to act as prosecutors?—It is a most objectionable practice.

274. Is there not a recent instance in which a witness has appeared as prosecutor, and has afterwards given evidence, not upon oath, in his reply as prosecutor?—I believe that was so.

275. Is not that a very strong illustration of the

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objection?—I think that it is very strong indeed; I think that it is impossible for an officer in such circumstances to fulfil his duty properly, either as witness or prosecutor.

276. (*Chairman.*) You think that the prosecutor should be appointed so that he can conduct a case in the same way as if the prosecution took place in a civil court?—Yes, because he can ascertain the nature of the case beforehand. At present nobody is charged with that, and to some extent it is thrown upon the court at the time of trial, which seems to me to be open to objection, because it places the court in the position of prosecutors.

277. (*Mr. Mowbray.*) Is it not sometimes the case that when a witness appears as prosecutor he is examined by the person who ought to occupy the most impartial position, namely, the acting Judge Advocate?—That was so in one case.

278. (*Lieut.-Gen.-Eyre.*) Do you think that the prisoner ought to have more protection than he has at present from the Deputy Judge Advocate?—I do not think that the prisoner ought to have more protection than he has at present from the Deputy Judge Advocate. Whether or not he ought to have further assistance is, I think, a grave question, but I am not prepared to offer any direct proposal, unless it be that an officer of the prisoner's regiment, or of his company, should always attend on his behalf.

279. (*Mr. Russell Gurney.*) Do you think that the system works well of having a person who is not a member of the court with authority upon all points of law superior to that of the president of the court?—Of course their relative positions are very different from those of a judge and a jury, and the position of the Judge Advocate being so distinctly inferior to that of a judge he loses so much power, but at the same time I think that it has proved of very great advantage that the court should be attended by an officer who has given special attention to the law and has paid special attention to trial by court-martial.

280. He is himself in many or in most cases probably a person of inferior rank to the president of the court-martial, is he not?—I should think so, generally.

281. Do you think that it works well that the president in conducting the proceedings should be entirely overruled by a person of inferior rank who is not himself a member of the court?—I think certainly that the Deputy Judge Advocate should have higher army rank, but whether his rank is higher than or inferior to that of the president I think that it is of great importance that his opinion should be treated as conclusive.

282. (*Chairman.*) What is the rank of a Deputy Judge Advocate?—It differs; in India he is a captain or a major, here they are generally full colonels.

283. (*Mr. Russell Gurney.*) In India it would frequently happen, would it not, that the Deputy Judge Advocate was not only of inferior rank but was of very much less experience than the president of the court-martial?—It does from time to time happen, and formerly when the Deputy Judge Advocate was a kind of prosecutor he was treated as quite an inferior officer, but now he has much more important duties attached to his office, and he has proportionate rank with the court, for instance, he sits on the right hand of the president in the court in a position of honour.

284 (*Lieut.-Gen. Eyre.*) I suppose that it is a very useful appointment?—It is an excellent appointment I think. There has hardly been a single miscarriage on a point of law since the appointment of the district Deputy Judge Advocates and they have undoubtedly saved many a court from falling into error.

285. (*Mr. Russell Gurney.*) You do not think that the dual authority works ill?—No; I should say that it works well, but it requires the Deputy Judge Advocate to have considerable forbearance.

286. And the president must have great forbearance too, must he not?—Yes. There have been some difficulties, but they have not been of great consequence.

287. (*Lieut.-Gen. Peel.*) What special rank has the Deputy Judge Advocate?—He ranks as an Assistant Adjutant-General.

288. (*Lieut.-Gen. Scarlett.*) What do you consider to be the special duties of the president of the court?—He is the chief member of the court, and he is co-responsible, if I may say so, with the Deputy Judge Advocate for the proper conduct of the proceedings. He is undoubtedly the chief person responsible for the finding and for the sentence.

289. (*Mr. Russell Gurney.*) But his questions may be overruled by the Deputy Judge Advocate, may they not?—I can only tell you what the Queen's Regulations say, they say that the opinion of the Deputy Judge Advocate "ought to be conclusive." It is worded in rather a guarded manner.

290. (*Lieut.-Gen. Scarlett.*) That is simply upon questions of law, is it not?—Yes.

291. (*Mr. Mowbray.*) Although the military rank of the president may be greater than that of the acting Deputy Judge Advocate, yet that difference of rank may be counterbalanced, may it not, by the authority acquired by greater legal knowledge and special education?—Quite so.

292. It is the special function of the Deputy Judge Advocate to be cognizant of the forms of procedure of courts-martial and to deal with offences against military law and their punishments, is it not?—Yes.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Room E., House of Lords.

Thursday, 26th March 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
THE RIGHT HON. RUSSELL GURNEY.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

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MAJOR-GENERAL RANDAL RUMLEY called in and examined.

293. (*Chairman.*) I believe you have held several posts in the army which have enabled you to form a judgment upon the nature of the military tribunals of this country?—I have.

294. Will you state what posts you have held?—After commanding a battalion I was sent to a depôt battalion at Parkhurst. I was then appointed to a brigade at Malta, and subsequently removed to

Gibraltar; I then became inspector-general of infantry; and that was my last post.

295. In all those posts your attention had to be directed to the subject of courts-martial?—Undoubtedly.

296. Have you any suggestion to offer to the Commissioners; first of all taking the constitution of the tribunal which, in your opinion, would tend to an improvement of the tribunal in its constitution?—I have not.

297. Do you think with regard to general courts-martial that the number to which they are now limited, namely, thirteen, is the best number?—Without experience of a different number it is rather a hazardous opinion to offer.

298. Have you ever found any inconvenience in constituting a general court-martial from being obliged to fill it up to the number of thirteen?—Not where I have been quartered or stationed.

299. Have you heard in any other branch of the service of any inconvenience arising from that circumstance?—There are certain stations, I believe, where the number may be less than that; I think that is provided for by the Mutiny Act.

300. Could you state from memory which those stations are?—I could not.

301. They are in the colonies, I presume?—Yes.

302. Have the tribunals so constituted the same powers as the court of thirteen?—Quite.

303. Have they powers of life and death?—Yes.

304. And of every other punishment?—Yes.

305. With regard to the prosecutor before general courts-martial, how is that prosecutor appointed?—By the Commander-in-Chief in England.

306. And in our colonies how is the prosecutor appointed?—By the officer commanding at the station.

307. He has the power to appoint any officer he likes to act as prosecutor in any case which comes before the court?—Certainly.

308. What is the usual rank of the officer who is appointed?—He is generally a field officer.

309. Has he the case submitted to him in full before he commences his duties?—I apprehend so.

310. Upon whom does he rely in the conduct of his case; does he exercise his own judgment uninfluenced by any other person?—I should say so.

311. Entirely independently?—I should say so.

312. At what period does he address the court on behalf of the prosecution?—He opens the proceedings by an address.

313. In that address does he state the whole of the circumstances which he will have to bring before the court?—Yes.

314. Does he give a list of the evidence?—Yes.

315. Is he obliged at any period of the proceedings to deliver to the prisoner a list of his witnesses or a statement of the nature of the evidence?—Certainly; before the trial.

316. How long before the trial?—At least 24 hours.

317. He must give to the prisoner a list of the witnesses and the nature of the evidence to be adduced against him?—Yes.

318. The charge of course is given?—Of course.

319. How long before the trial must the charge be given?—It must be at least 24 hours; I do not think that any thing is specified in the Act to that effect.

320. The examinations of witnesses in chief, as we have heard, is conducted by written questions and answers?—I think that was not the practice.

321. Is it not the practice to put down the question for the prosecution?—The charge having been read over, in the hearing of all the witnesses summoned to give evidence on the court-martial, the first witness is called in and asked what he has to state relative to the matter; and he delivers himself of what he knows upon the subject.

322. But supposing that it happens that the prosecutor is not satisfied with the extent to which the witness has gone and wishes to ask further questions, are these questions given verbatim or put down in writing?—They are put down in writing.

323. And I believe that all the questions for the defence are also put down in writing?—Yes.

324. Is it your opinion that it is necessary to carry on that system under the present state of things?—You certainly might save the time of writing the questions, but I do not see that you would save anything else.

325. But do you think that now that shorthand writers are admitted before courts-martial there is a necessity any longer for continuing the practice of putting down the questions and answers in writing?—I think not, provided he is available to read them.

326. You do not think that justice would in any case fail from such a proceeding?—I cannot see how it should.

327. Do you recommend that shorthand writers should be admitted before any other court-martial than general courts-martial?—I do not see what advantage you would gain by it.

328. But is there not an evident advantage in getting the evidence taken down with as little delay as possible?—If there is any inconvenience it must be solely to the members of the court. I do not think that substantial justice is affected at all by the questions and answers being written

329. But are not the proceedings of the court very much lengthened by the necessity of putting down the questions and answers in writing?—Doubtless, so far as the number of questions goes, by the amount of time you would take in the writing.

330. But do not the expenses of a trial by a court-martial depend very considerably upon the speed or delay with which the proceedings are conducted?—I am not aware of any expense attendant on courts-martial.

331. In the case of a prisoner, for instance, in his defence having to take the best advice he can get, may not his expenses be very materially increased if in consequence of the slowness of the examination the court may be adjourned from day to day?—I have never during my experience found any inconvenience or delay from this cause.

332. (*Lieut.-Gen. Scarlett.*) If you had to pay a counsel for that time day by day, would it not increase the expense?—Certainly, just in proportion to the time occupied by writing the questions, but that time only.

333. (*Chairman.*) But is not every delay in a court-martial a cause, first of all, of increase of expense in the court, and next is it not an increase of expense to the prisoner tried?—Of course where the prisoner has a legal adviser to defend him; in such cases it would add to the expense, but they are rare.

334. Does it not sometimes happen that an officer who is tried has to bring a great number of witnesses from a great distance?—It might be so.

335. Has he not to pay the expenses of those witnesses?—I believe that depends upon the finding of the court.

336. But does it not frequently happen that an officer tried by court-martial is put to very heavy expenses from the number of witnesses whom he has to bring?—It might be so, certainly.

337. In that case any delay in the proceedings of the tribunal must, of course, be of very serious consequence to the prisoner?—Doubtless, as regards expense.

338. With regard to district courts-martial you say you do not see any objection to a shorthand writer being admitted, but you do not see any benefit from it?—I do not.

339. In a regimental court-martial I presume it would increase the expense very materially to admit a shorthand writer?—Certainly.

340. In your experience do the generality of regimental courts-martial last more than one day?—No.

341. They generally commence and terminate the same day, do they not?—They do.

342. With regard to the defence of the prisoner, could you assign to the Commission the cause why a

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prisoner is not entitled to be heard by his legal adviser before a general court-martial, seeing that the prosecution may be carried on by a person appointed by the commanding officer of the district?—The prisoner can have a legal adviser if he wishes.

343. But may that person address the court?—No.

344. Can you assign any reason why the same privilege should not be given to a prisoner of addressing the court which is given to the prosecutor?—As a rule, I think that in any difficult case the prisoner would avail himself of the services of a legal adviser, and I think that if he were permitted to address a court of officers who are not acquainted with the law very intimately he might feel disappointed if his address had not the desired effect. At the same time I do not think it would weigh very much with officers. The prisoner has the privilege of addressing the court, as well as the prosecutor.

345. Is a legal person never employed for the prosecution?—I have been on a court-martial where a legal officer was appointed from the Judge Advocate-General's Office.

346. (*Lieut.-Gen. Scarlett.*) As Deputy Judge Advocate?—In addition to the Deputy Judge Advocate.

347. Not as prosecutor?—No; he was a legal adviser assisting the prosecutor.

348. (*Mr. Mowbray.*) Sometimes there are legal gentlemen employed to assist the prosecutor, are there not?—Yes.

349. And sometimes also the prisoner is assisted by a legal adviser?—Sometimes.

350. (*Lieut.-Gen. Scarlett.*) Have you ever seen any one employed to assist the prosecutor independently of the Deputy Judge Advocate?—The Deputy Judge Advocate General has assisted the prosecutor.

351. (*Mr. Headlam.*) Have you ever seen any legal gentlemen address the court on either one side or the other?—No.

352. (*Chairman.*) Does the Deputy Judge Advocate address the court for the prosecution if he is the prosecutor?—I think not.

353. Do you see any objection to the prisoner's being allowed the same privileges in his defence that are enjoyed by the prosecutor, that is to say, that he should be enabled to select any friend of more ability than himself to defend him, and to address the Court in the same way as the officer for the prosecution does?—He can do so, provided he is not a legal adviser.

354. (*Mr. Headlam.*) Is it the case at present that the prosecution can obtain the aid of any civilian to address the court?—No.

355. Any friend may advise the prosecution?—Yes.

356. And any friend may advise the prisoner?—Yes.

357. So that at the present moment there is no distinction, as I understand it, between the prosecution and the prisoner?—No.

358. (*Chairman.*) Is there not this distinction, that the officer conducting the prosecution is enabled to address the court, whereas the friend of the prisoner is not allowed to address the court?—There is that distinction.

359. The object of my question was to ascertain whether you think it necessary to keep up that regulation?—I do not see any particular object in preventing the prisoner from having the same advantage as the prosecutor has.

360. (*Lieut.-Gen. Peel.*) But the prisoner can read any address prepared for him by his friend, can he not?—Certainly.

361. (*Chairman.*) The prosecutor cross-examines the witnesses, does he not?—Yes.

362. *Vivâ voce*?—*Vivâ voce*, or by questions through the president; that is the more usual way.

363. Has the prisoner any power of that kind?—Yes.

364. Can he *vivâ voce* cross-examine the witnesses?—Yes, or by questions through the president, which is the usual way; that is to say, he puts his question *vivâ voce* through the President, and then it is written down and answered.

365. (*Mr. Mowbray.*) Those are questions suggested by himself to the president?—It may be so.

366. (*Chairman.*) But questions may be also suggested by his friend, who may be a legal adviser?—Yes.

367. (*Lieut.-Gen. Eyre.*) With reference to that particular point, would it, in your opinion, be desirable to have a specific rule as to some particular party attending to watch the proceedings on the part of the prisoner; for example, an officer of his company, where the Captain was not the party who prosecuted (that would be a matter, of course, for detail and consideration); but should you not have a fixed rule laid down, there being at present no rule?—As a rule, I think it is the duty of the President to watch the case, not only for the prosecution, but also for the prisoner.

368. (*Mr. Headlam.*) Is it the case that at this present moment neither the prosecution nor the prisoner can have the benefit of any counsel?—Not to speak.

369. Do you think there would be any objection to allowing the some privilege to both; that is to say, to allowing the prosecution to be conducted by a civilian, and to also allowing the prisoner to be defended by a civilian?—I think you would very much increase the expense, which was the objection suggested just now with regard to writing down the questions in courts-martial.

370. But supposing the prisoner wished it, and the case was a difficult one, do you see any other objection to it than that it might in some respects add to the cost of the trial?—In my opinion they would do better without it.

371. Supposing then that the prosecution were in the hands of a military man, you would not allow the prisoner to be defended by counsel?—I did not say that.

372. But would you allow it?—Yes, I would, as at present.

373. But to be defended by counsel speaking?—No, not speaking.

374. (*Lieut.-Gen. Scarlett.*) Not addressing the court?—No.

375. (*Mr. Headlam.*) What objection have you to counsel addressing the court?—I think I have already stated that the court is not composed of lawyers. It is a court of officers, who are certainly bound to be acquainted with whatever is contained in the Mutiny Act and the Articles of War, but when there comes any special pleading, which is, more a lawyer's profession than that of the officers, I think it would not further the ends of justice at all. I have never found that substantial justice has not been done by the present mode so as to show the necessity for this interference.

376. Supposing the prisoner is defended by counsel who are not allowed to speak, any legal point can be raised?—Certainly.

377. Do you think it not desirable that the counsel should answer that point?—He can put it through the prisoner. The prisoner may say anything he likes, or the counsel may write down anything for the prisoner to read.

378. That is, if the court is defective for adjudicating legal points?—I did not say that it was exactly defective for adjudicating legal points. I said they were only supposed to be acquainted with the Mutiny Act and the Articles of War; and if other points were introduced which are not contained in those, I think it would be a pity, and only complex matters.

379. But your opinion is that it would be desirable that those legal points should be raised by counsel, but that it is not desirable that counsel should speak upon them?—I think that if they are raised by counsel it is desirable that they should come through the prisoner.

380. (*Mr. Mowbray.*) You say that the prisoner

can read an address which is prepared for him by another person?—Certainly.

381. Do you not think that the force of an address is very much weakened by being read by an illiterate man, a private soldier, instead of being read by the person who has prepared it?—I have no doubt that the person who wrote the address would think so, even if it had to be delivered by an officer.

382. If you object to the admission of a legal representative for the prisoner to speak or to read the address, should you object to any officer being selected to act as his friend and to read the address prepared for him?—No.

383. (*Lieut.-Gen. Peel.*) At present there are two parties before the court—the prosecutor and the prisoner—and they are at the present moment upon exactly an equal footing, either of them may be assisted by an adviser, but they have each of them the power of putting any questions that the adviser suggests to them; each has the power of addressing the court, and there is the Deputy Judge Advocate in order to see, as I may say, fair play between them as far as the law is concerned. I understand you to say that you do not think that though they may be perfectly competent to give an opinion upon martial law they would so well understand any legal question that might arise?—That is my view.

384. (*Mr. Mowbray.*) Do you think the prosecution and the defence may be said to be upon an equal footing if the case for the prosecution can be stated by an officer, an educated gentleman, who has prepared the speech himself with which he addresses the court, and if, on the part of the prisoner, the prisoner, an illiterate man, has to read an address prepared for him by some one else, and is not to be represented by an educated man?—The matter being committed to paper and before the court, they can as well judge and interpret the meaning of it as anybody else; and I think the prisoner is upon an equal footing with the prosecutor.

385. Do you not think that the effect of the matter may very much depend upon the way in which the argument is addressed to the court?—It may be so, but I do not think that it affects the justice of the case.

386. (*Lieut.-Gen. Eyre.*) Would not such an arrangement be very unacceptable to the army; would they not consider rather a doubt to be thrown upon their justice and honour in conducting the soldiers' courts-martial?—I think it seems rather a reflection upon their competency to understand the Mutiny Act and Articles of War.

387. (*Mr. Whitbread.*) Do you think that no prisoner would like to have his case conducted *vivâ voce* by his friend or his legal adviser, if he had the option given him?—I dare say he might; some might and some might not.

388. (*Lieut.-Gen. Scarlett.*) Do you think that the prisoner loses any advantage now from not having a counsel to plead for him?—No, I do not.

389. Do you think that full justice is done to the prisoner?—I think so.

390. And that justice is done without the address of a counsel?—I think so.

391. (*Mr. Headlam.*) In the case of an important and difficult trial, such as the case of the trial of an officer for conduct unbecoming an officer and a gentleman, do you think that the court is competent to decide without the address of any counsel or skilful man on behalf of the prisoner?—They have in my experience decided on such case justly, without such an address.

392. (*Chairman.*) You do not suggest any alteration in that particular?—I do not.

393. Do you think that any alteration would be unadvisable?—I think that by the present mode substantial justice is done to the prisoner, and therefore I do not advise any alteration.

394. (*Lieut.-Gen. Scarlett.*) Do you consider that in a general court-martial the prisoner is at all under the protection of the Deputy Judge Advocate; do you consider that it is the duty of the Deputy Judge Advocate to watch over the case, and to prevent any injustice done to the prisoner?—I do most assuredly.

395. And that is the practice?—I consider it so.

396. (*Mr. Mowbray.*) And you think that would be as efficient for the protection of the prisoner as his having legal advice?—I think so.

397. Or the assistance of a legal gentleman to prepare the defence?—That is permitted now, provided that he does not address the court.

398. (*Mr. Russell Gurney.*) The Deputy Judge Advocate of course knows nothing of the prisoner's case until he hears it at the trial?—Not of necessity.

399. But that is necessarily so, is it not; he would not be entrusted by the prisoner with the nature of his defence, would he?—I do not know why he should not, if the prisoner so desired it.

400. He is to maintain an entirely impartial position, and as far as he can consistently with that, he is to take care that no injustice is done to the prisoner. Do you not think that a person who is in the confidence of the prisoner, and who is entrusted by him with the nature of his defence can watch over his interests much more effectually than a person who is ignorant of them?—Surely.

401. (*Mr. Headlam.*) At the present time all the proceedings of the court are put down in writing, are they not?—That is the case.

402. And you see no objection to that in practice?—I do not.

403. The document containing this record of the trial is afterwards forwarded to the Judge Advocate-General's office, is it not?—It is.

404. And the Judge Advocate-General has in consequence the opportunity of revising the proceedings which take place at the trial. Supposing that the evidence was not taken down, and that the questions were not recorded, the Judge Advocate-General would have no power of revising the proceedings afterwards, would he?—I should think not.

405. Consequently if there were any improper question asked at the trial, and there were no record of it, the Judge Advocate-General would not be aware of the impropriety of the question which had been put?—He would not.

406. So that if any injustice were done to the prisoner by the fact of any cross-examination being stopped, the Judge Advocate-General would not be able to judge of that?—No.

407. So that unless there is some complete record of the trial, no advantage arising to the prisoner from a complete revision of the proceedings could possibly be obtained?—No.

408. Do you not think that a matter of considerable consequence?—Certainly.

409. (*Mr. Whitbread.*) Upon the subject of taking down questions, is there not a very great latitude allowed to witnesses to alter the first answer which they give *vivâ voce* to any question before it is finally taken down and reported as part of the proceedings?—There is no very great latitude given.

410. They are allowed to amend the answers to the questions, are they not?—If they do not perfectly understand the question; if they give a vague answer, the question is perhaps read again to them, and they are at liberty to correct what they have said. If they had not a correct apprehension of the question, on its being repeated they are at liberty to correct what they have said under misapprehension.

411. Then the first answer would not appear upon the proceedings, but the corrected answer would?—By the regulations it should be all written down.

412. As a matter of practice is it so?—As a matter of practice it should be all written down.

413. (*Lieut.-Gen. Peel.*) By whom are the answers taken down in writing?—There is generally an officer deputed by the president to write the proceedings, and it is his business to do it.

414. If there was a shorthand writer he would perform that duty?—I presume so.

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415. You say that the prisoner reads an address which is prepared for him, does that appear upon the proceedings?—Yes, and it is attached to the proceedings and signed by the president.

416. And as far as the revision of the proceedings by the Judge Advocate-General is concerned, when it comes to him it does not matter whether it was read by one person or another?—Not in the least; I think I stated that each member of the court has the opportunity of reading it and putting his own interpretation upon it.

417. (*Mr. Whitbread.*) Is it not your opinion that the power of efficient cross-examination is very much diminished by the slow process of having to put down every question in writing and to take down the answer?—My experience of courts-martial does not lead me to that opinion.

418. (*Mr. Mowbray.*) You say that each member of the court has an opportunity of reading the prisoner's defence, do you mean that where a general court-martial consists of thirteen officers they would be likely to take time to read and consider the prisoner's defence?—They have each the opportunity so to do.

419. They have the opportunity, but as a matter of fact what is the practice?—As a matter of fact, I think that they take it in as it is read; but if it is a very difficult question, any member of the court would say, "I do not exactly understand what has been read "out, and I will just satisfy myself upon the point "by reading the document."

420. Then although as regards the Judge Advocate-General, the effect of the address upon the Judge Advocate-General in revising the proceedings would depend upon the matter of the address, as regards the court the effect would rather be produced by the manner in which the address might be delivered, would it not?—I think not.

421. With respect to the shorthand writer do you think there would be any difficulty in finding soldiers in the army who might be trained to shorthand writing, so that you might have shorthand writing in the regimental courts-martial?—I never practised shorthand writing, and I do not know what the difficulties attending the acquisition of it are.

422. (*Mr. Russell Gurney.*) You said that a list of witnesses had always to be furnished to the prisoner at least 24 hours before the trial commenced; can any witnesses be called who are not included in that list?—Not unless notice is given to that effect.

423. I mean unless he gives notice 24 hours before the trial?—I think that if the witnesses were upon the spot, and the prisoner almost at the last moment thought that he would like to have them he would be at liberty to call upon them.

424. But supposing that the prosecutor receives information in the course of the trial of witnesses who might be important, is he forbidden calling them in consequence of their not having been included in that list?—I should think not.

425. Then the list is not binding upon him in any way?—No, it is not binding.

426. (*Lieut.-General Peel.*) The list of witnesses might be altered with due notice?—Yes.

427. (*Mr. Russell Gurney.*) What notice is that?—As much as they could conveniently give.

428. Supposing that it is in the course of the trial, they cannot give any notice?—Immediately the prosecutor is aware that he wishes to have any witness he notifies it to the president.

429. And he calls him at once?—He calls him at once if he is avilable.

430. Then there is no notice given to the prisoner?—Only that sort of notice.

431. (*Chairman.*) I believe that when the examination for the prosecution and defence is over the Deputy Judge Advocate addresses the court and sums up the evidence?—Yes.

432. Is that done in the presence of the prisoner?—Yes.

433. When the Deputy Judge Advocate has addressed the court, does the president of the court take any special part in the proceedings?—No.

434. How do the court proceed to deliberate upon what they have heard?—The court is cleared, and they deliberate and take the opinions of the several members.

435. Does the Deputy Judge Advocate remain in the room?—He does.

436. The prosecutor does not, I presume?—No, he does not.

437. Then is it not the custom that the opinion of the junior officer is taken in the first instance?—It is.

438. Is that as regards, not only the guilt or the innocence of the prisoner, but as to the punishment to which he shall be submitted in case he is found guilty?—The same in both finding and sentence.

439. You mistake my question. The junior officer gives his opinion first as to the punishment if the prisoner should be found guilty, does he not?—Yes the same course obtains in both cases as to opinion and as to sentence.

440. Do you know the origin of that custom?—I do not.

441. Do you know the reason of it?—I presume that it is supposed to be fairer towards the party under trial.

442. (*Lieut.-Gen. Peel.*) So that the junior officer should not be influenced by the opinion of his seniors?—Quite so.

443. (*Chairman.*) You do not recommend any alteration in that respect?—I do not know that I should recommend anything; if I did it would be that the opinions should be given from flanks to centre.

444. That is a very valuable suggestion. You think that if the system is altered at all, the opinions should be taken of first a junior and then a senior?—Yes, alternately; leaving the president the casting vote.

445. There are thirteen members constituting the court; does the president give his vote with the rest of the court?—Yes.

446. And then has he the additional vote which is the casting vote?—His is the odd or casting vote.

447. But supposing by any chance one member was absent, what then?—He is replaced.

448. Has the president then a double vote?—No.

449. But supposing that, through illness, the court is diminished to twelve; supposing that the opinions are equal, who has the casting vote?—That has never come under my experience; I do not think that I have ever known such a case.

450. Does it remain a valid court in case all the members are not present?—I should say not; the practice is to have more than the required number detailed for a general court-martial.

451. The number may come to 14?—Then I think the junior would not give an opinion at all; or if the opinions were equal, the prisoner would have the benefit.

452. (*Lieut.-Gen. Peel.*) Is it not the case that two extra officers are warned for duty in case of one being absent?—Generally.

453. (*Lieut.-Gen. Scarlett.*) And they attend and hear the evidence, do they not?—Yes.

454. (*Mr. Whitbread.*) Can a new member of the court be brought in in the case of the sickness of one of them without having heard the evidence?—No.

455. Then supposing that by sickness or some other cause the court is reduced below the equal number, what happens?—I have never known such a case, but there would be a fresh trial.

456. (*Mr. Mowbray.*) It is usually the case to constitute the court of a larger number of members than is required by the Mutiny Act and the Articles of War, is it not?—Yes, in the case of general courts-martial.

457. So that in the case of a general court-martial it frequently consists of 15 officers, whereas 13 is the legal number?—Yes.

458. And in that way provision is made, in the

case of absence or illness, to the extent of two, the court being still able to sit and come to a decision?—Quite so.

459. But in the event of their being reduced below 13 there can be no finding of the court?—No.

460. (*Chairman.*) When the numbers are by any chance reduced to an even number and the opinions are even, who has the casting vote?—If it came to 14 I think the junior member would retire; but if the votes were equally divided, the prisoner would have the benefit.

461. But under no circumstances would the senior officer have a casting vote?—If there were an odd number, his would be the casting vote.

462. Under those circumstances it cannot arise in a court-martial in your opinion that one officer of the court should have a double vote?—No.

463. Would you inform the Commission from your experience of courts-martial whether any large number of them have had their findings revised by the proper authority?—Yes, a considerable number of them.

464. Could you state in about what proportion such revision has taken place?—I should say about one-fifth.

465. In the cases which have been revised what should you say are the principal grounds of revision; was it want of proper finding or a want of proper punishment, or in what respect were they defective?—Sometimes one, and sometimes the other.

466. Which should you say was the preponderating effect upon which the decision of a court has been revised?—On the sentence, I think.

467. A sentence that, in the eyes of the authority, has been either inadequate or too great?—Yes. Perhaps in answering that question I should say that there are several points which really are of no importance. But I will give you an instance of one or two, and then the Commission will be able to judge, and see what I mean by revisions. If a soldier is tried for habitual drunkenness and is found guilty, the Article of War proceeds to say, that he shall be subject to a stoppage of a penny a day, and in addition that he is to receive any other punishment which the court is competent to award. Sometimes the court does not read this article very critically; they award the imprisonment before they add the stoppage. If I were the confirming officer, I should point this out, and direct the court to adhere to the Article of War, and there would be a revision.

468. (*Lieut.-Gen. Scarlett.*) That would be simply a re-writing of the proceedings and not a revision of their sentence?—That is all. But I mean to say that cases like that cause a revision.

469. (*Chairman.*) Have you any suggestions to make with regard to the revision of courts-martial?—None.

470. You think that it is advisable to continue the present mode of revision?—I think so.

471. Do you think that the present regulations as to the mode of revising the sentences of courts-martial are upon the whole more favourable to a prisoner tried than if he was invariably to be left to the decision of the court itself before whom he is being tried?—I do not quite catch the meaning of the question.

472. (*Lieut.-Gen. Scarlett.*) Does not the power of revision act both ways?—Surely.

473. It may be in favour of the prisoner or it may be against him?—Surely.

474. (*Chairman.*) Is the revision oftener in favour of the prisoner, or of the prosecutor?—I think it is oftener in favour of the prisoner.

475. (*Mr. Whitbread.*) Is there a power in the confirming officer to send back the sentence of the court for severer punishment?—Surely.

476. (*Chairman.*) Is that power often exercised?—No, I do not think it is.

477. But there is the power in the convening officer to refer the case back to the court for their consideration?—Yes.

478. (*Lieut.-Gen. Scarlett.*) What is the usual effect of a court not increasing the punishment where the confirming officer does not think it sufficient?—In some cases discipline would be affected thereby, but the sentence only can be inflicted.

479. But what is generally the practice?—In some cases they attend to his suggestions, and in other cases they adhere to their former finding.

480. What is the practice of the confirming officer generally when they adhere to their former sentence if they inflict an inadequate punishment upon a soldier and that is pointed out by the confirming officer, and the court refuse to alter their sentence?—He can only confirm the sentence.

481. But does he quash the proceedings altogether, and does the prisoner escape in consequence of the sentence not having been revised?—Not necessarily.

482. (*Lieut.-Gen. Peel.*) The final sentence must be the sentence of the court?—The final sentence must be the sentence of the court; but the confirming officer may remit, mitigate, or commute.

483. The revising officer has no power if the court insist upon their sentence?—None at all. He merely directs attention to certain points and they reconsider the case; and if they entertain the same opinion as before they adhere to their former decision.

484. And they may alter it upon reconsideration?—They may.

485. (*Mr. Whitbread.*) Have you ever known a case where a court has passed a sentence and the confirming officer has sent it back for revision and a severer sentence has been the result?—Yes.

486. (*Mr. Headlam.*) Supposing that the revising officer thinks the punishment not sufficient, he can remit it to the court below to consider whether the punishment should be increased; and not unfrequently the court below abides by its opinion, and does not increase the punishment?—Yes.

487. Supposing on the other hand, the revising officer thinks the punishment too severe, he can himself remit a portion of the sentence, can he not?—Certainly.

488. And that probably would be the course he would take if he thought the punishment was too severe?—Yes.

489. So that the confirming officer has the power at once of remitting if he thinks the sentence too severe, but in the event of his thinking it not severe enough he can only increase it by sending it back?—Certainly, it must be the sentence of the court.

490. (*Lieut.-Gen. Scarlett.*) Do you consider that a regimental court-martial is generally held for the purpose of investigating the guilt or the innocence of a prisoner, or for awarding punishment beyond what a commanding officer is empowered to give?—I consider that it is a combination of the two.

491. But do you consider that it is more for the purpose of awarding a punishment than for the purpose of investigating the guilt of a man which has been already in some degree decided upon?—To award a punishment.

492. Do you think that the number of regimental courts-martial might be diminished if a greater power was extended to the commanding officer, who is now restricted to seven days' confinement?—The number of courts-martial would be diminished, I think.

493. Do you think that the frequency of regimental courts-martial rather takes away from the effect that those courts-martial have upon the minds of the men?—No, I do not.

494. (*Mr. Mowbray.*) Do you think that the number of officers constituting a regimental court-martial might be less than five?—It is provided for; that if you cannot get five, three will suffice.

495. But would you not think it advisable to reduce it to three generally?—No, I do not see why you should so reduce it.

496. (*Mr. Russell Gurney.*) I see that by the regulations the court is to consist of officers of equal or superior rank to the prisoner tried. Supposing a junior officer is on his trial, and the prosecutor or the person who is preferring the charge is one of superior

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rank to himself, what is the proportion of his own rank that the prisoner would have?—There is nothing defined with respect to that by regulation, or Mutiny Act, except that none are to be of inferior rank to the prisoner.

497. Might it be constituted entirely of officers of the same rank as the prosecutor?—It is not usual so to do. I never remember a general court-martial so constituted.

498. Then as a matter of practice, supposing we were to take the case of a general and an ensign, the general being the person at whose instance the charge is preferred, and the ensign being the prisoner, would the ensign have on the court any officers of his own rank?—Surely.

499. How many out of the thirteen?—I do not think there is any number defined by the Mutiny Act.

500. But as a matter of practice?—As a matter of practice I should say out of thirteen he would have as many as four ensigns or lieutenants, and it would be made up of captains and field officers; there is nothing defined as to the number of officers of the same rank as the officer tried to be on the court-martial.

501. As a matter of practice how many ensigns would there be?—Of ensigns and lieutenants I should say there would be four.

502. And of those would two be ensigns and two lieutenants?—Yes.

503. Do you think that it is perfectly fair to the one of junior rank that he should have so small a proportion of his own rank?—I think so.

504. (*Mr. Whitbread.*) Have you ever known a case where a prisoner was acquitted by the court, and the confirming officer sent back the case for revision, which ended in his being convicted?—Yes.

505. (*Chairman.*) Is that a frequent case?—It is not frequent.

506. Do you know the result of any such case?—I do not remember.

507. (*Mr. Mowbray.*) The power of sending it back exists?—Yes, and it is occasionally exercised.

508. (*Lieut.-Gen. Peel.*) Does the revising officer when he sends back the sentence state the grounds upon which he sends it back?—Yes.

509. (*Lieut.-Gen. Eyre.*) There are now, I think, six denominations of courts-martial; might not those be reduced to three, or even to two, viz., a general court-martial and a minor one of the same denomination, and perhaps a regimental court-martial, so as to get rid of the detachment general court-martial?—I do not see how you could get rid of the detachment general, because, if I rightly understand the Articles of War, this detachment general is resorted to where you cannot conveniently assemble the number of officers required for a general court-martial; so that if you wished to exercise the powers of a general court-martial where that number of officers is not available you must take the minor number of officers.

510. (*Lieut.-Gen. Scarlett.*) Are there not, in point of fact, only three kinds of courts-martial; the regimental, the district, and the general, other courts-martial being exceptions, but having the same power relatively?—Yes.

511. (*Lieut.-Gen. Eyre.*) The garrison and the district courts-martial are precisely identical, are they not?—They are precisely identical in power and constitution.

512. With regard to the district court-martial, which is frequently composed of officers of the prisoner's own regiment, do you not think that that would be better altered?—I do not see anything to gain by any alteration; the prisoner has the power of objecting to any of the members, or to the president.

513. (*Lieut.-Gen. Scarlett.*) Do you not think that where it was possible from the fact of these being a number of officers of different regiments it would be better to have them from different regiments?—Surely. I think it is an exceptional case in a district to have them all of one regiment. It only occurs when they cannot get others.

514. (*Mr. Mowbray.*) If the court were composed of officers from other regiments it would be more likely to secure an impartial trial for the prisoner, would it not?—It would. It is only when others are not available that the court is so composed.

515. (*Lieut.-Gen. Eyre.*) What is your opinion as to regimental courts-martial as now constituted, are such courts absolutely necessary on home service, or could they be dispensed with except on active service or in isolated situations?—They could be dispensed with if you had a superior court, such as a district or garrison court-martial.

516. The general constitution of a regimental court-martial is a captain and four subalterns, all of whom may be very young, especially the subalterns; do you think that it would be more satisfactory and that it would settle all the scruples of those who object to those courts if they were composed of a field-officer, two captains, and two lieutenants; and might not such a court as this that I have last described be armed with greater power than the present regimental court and deal with heavier crimes?—They might, certainly; I think, for the reason given by Lieut.-Gen. Eyre, it would be advisable that the constitution of those courts should be so altered, if only such very young officers were available.

517. Do you not think that this would be a better system than to descend in the scale of rank according to the continental fashion?—I do.

518. You think that it would be better to go up than down?—I do.

519. With respect to the new practice of courts-martial, you that the system of a Deputy Judge Advocate is good?—I think so.

520. And you have no improvement to suggest as to that?—None.

521. Do you think, from your experience, that the rank held by such officer is of any consequence to the efficient performance of his duty?—No, provided he has the experience.

522. His rank does not signify, provided he has the proper experience?—No.

523. Do you consider that, as a rule, courts-martial are less just, less considerate, and less merciful, considering the grave importance of discipline, than civil courts are?—I have not had much experience of civil courts, and therefore cannot say.

524. You have not acted as a magistrate?—No, nor have I attended sessions much, so that I am not competent to answer the question.

525. There are some, and not a few, who think that a regimental court-martial might act merely as a jury, to pronounce only as to the guilt or innocence of the prisoner, and that the punishment should be awarded by some high military authority specially appointed to perform such judicial duty, rather in imitation of civil practice, what should you think of that?—I think you had better leave it as it is. The confirming officer has the power and to suggest his reason for a revision; he has that sort of controlling power which this superior officer would possess.

526. With reference to my question about the change in the constitution of regimental courts-martial, if that suggestion was carried out might it not tend to render them a great deal more efficient, and to reduce the necessity very frequently experienced for resorting to district courts?—It might, and probably would have that effect if you gave them increased powers.

527. I am not sure whether you have expressed a decided opinion as to the real necessity of writing the whole of the proceedings of courts-martial?—I do not say that there is a downright necessity for it, except for the case that was mentioned by one of the Commissioners, namely, that the Judge Advocate-General, to whom these courts-martial are referred, if there is nothing in the documents to show where the illegal question arose, has not that control which he otherwise would have by the questions being written.

528. (*Mr. Mowbray.*) Does not that consideration

render it absolutely necessary that there should be a written record of the proceedings of every court-martial?—There is a written record of the proceedings of every court-martial.

529. Do you consider that the proceedings would be complete without a written record of the evidence?—No, there is a written record of the evidence.

530. (*Chairman.*) I see by the 734th section of the Queen's Regulations that, with a view of making junior officers of regiments more acquainted with the principles of courts-martial they are ordered to attend every court-martial at the station where they are quartered for six months after they have joined their regiment?—Yes. The words of paragraph 734 of the Queen's Regulations are, "With this object in "view, officers will be required on their entrance into "the army to attend the proceedings of all courts-"martial that may be held at the station where they "are quartered for at least six months from the date "of their joining. They are not, however, to be "permitted to remain in court when it is cleared for "deliberation, and are not to be nominated members "of courts-martial until the commanding officer shall "deem them competent to perform so important a "duty."

531. Is that practice universally kept up in the regiments?—Yes.

532. Looking to the general practice, do you think that there are a sufficient number of courts-martial at the various stations to give the junior officers this requisite information with regard to the courts?—I think that Article should be taken in connexion with Article No. 265, which is as follows:—"The com-"manding officer is to take frequent opportunities of "personally examining the officers, more particularly "the subalterns, upon every point connected with "their duties in the field; as to their knowledge of "the 'Mutiny Act and Articles of War,' the 'Queen's "Regulations,' the 'Field Exercises,' and the 'Mus-"ketry Regulations;' of the forms, principles, and "practice of courts-martial." I think this, in connexion with the section which I read before, should prepare a young officer to take his place as a member of a court-martial.

533. From your experience, you would say that those two of the Queen's Regulations are strictly attended to throughout the British army?—I can only speak as to depôt battalions, because it was only over them that I had control as Inspector-General of Infantry.

534. Was it the case at Gibraltar when you had that command?—I took care that this was carried out in the regiments under my orders.

535. But you could not speak to the practice in other commands?—I could not.

536. Do you think it a very essential part of the duty of a commanding officer that he should attend to those regulations?—Undoubtedly.

537. Do you think that the average number of courts-martial at the various stations in six months is sufficient to give the junior officers on that station the amount of experience which is required in those two sections?—I think it is.

538. (*Mr. Headlam.*) Is it not the case that in the great majority of courts-martial the facts are very simple and very few?—Very much so.

539. And is it not also the case that in the great majority of instances there is really no defence at all?—Generally.

540. The man either pleads guilty or throws himself on the mercy of the court and says that he has nothing to say?—Yes.

541. But is it not also the fact that every now and then a case occurs of very considerable difficulty and gravity, involving the character of an officer, for instance, and in which difficult points of evidence are continually raised during the trial?—I noticed it during a court-martial of which I was a member.

542. Is it not the case with respect to these latter courts-martial that they very often fail?—Not in my experience; in the case to which I allude there were legal advisers on both sides.

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543. Is it not the case that not unfrequently where the sentence is submitted to the Judge Advocate-General he recommends that it should not be carried out?—I presume that he does so; but these courts-martial go to higher authority.

544. With respect to all the simpler cases, as I understand you, you think think that the present system has no disadvantages, and you are not prepared to make any recommendation?—No.

545. With respect to those more difficult cases, do you think that it would be any improvement if they were more assimilated to trials of a civil kind; if a gentleman of high legal ability was to decide upon all the difficult questions of evidence which arose upon them; and if the prosecution were conducted by a counsel of eminence; and if the defence were conducted by a counsel also on the part of the prisoner; and if the president, or whatever you might call him under those circumstances, then summed up to the officers forming the court-martial, and they gave their verdict after hearing all those points which have been raised upon the trial?—My practice and the result of my experience do not induce me to think that it would be an improvement.

546. Supposing it to be true as I have stated that many of those cases fail in consequence of mistakes made by the court, have you any suggestion to make as to an improvement?—No; the president has the assistance of the Deputy Judge Advocate as to any legal points.

547. That is his duty at the present moment?—Yes.

548. If at the present moment that system does not result in making the courts successful, have you any suggestion to offer for making them better hereafter?—No; assuming that in such cases the court has had the advice of a Deputy Judge Advocate.

549. You do not think that if there was a legal officer presiding at the trial, and filling the place of Deputy Judge Advocate, and himself deciding upon all points of evidence and of law, the trial would be more likely to be successful?—I have had no experience of such a practice, and therefore cannot answer the question.

550. You cannot give any suggestion for any material improvement with respect to those more grave and complicated cases?—I cannot.

551. (*Mr. Mowbray.*) Have you had much experience in trials in cases of embezzlement and cases involving matters of account?—I have been on courts-martial where officers have been tried for such offences.

552. Have you also known cases where non-commissioned officers have been tried for similar offences?—Yes.

553. Do you think that in matters of account those questions have been satisfactorily disposed of?—I think so, and that substantial justice has been done.

554. Do you think that the court have gone patiently and intelligently into the case?—I do.

555. And do you think that those cases have been proved by legal proof, such as would have been accepted in an ordinary criminal court?—I only know what is accepted at courts-martial, and not what is accepted at ordinary criminal courts.

556. You think that such cases have been patiently investigated and fully proved?—I do.

557. (*Lieut.-Gen. Peel.*) Do you consider that the present constitution of regimental courts-martial enables the members properly to exercise the powers with which they are entrusted?—I do

558. (*Mr. Russell Gurney.*) Do you think that in practice any inconvenience arises from the authority given to the Deputy Judge Advocate who may be of very inferior rank to the president of the court-martial?—No.

559. You do not think that the dual authority works ill in any way?—No.

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560. But the questions put by the president may be over-ruled by the Deputy Judge Advocate, may they not?—They may.

561. You think that no jealousy is created thereby?—Oh, no.

562. Has your attention been directed to whether it would be desirable in the trial of a non-commissioned or a private to have any persons more nearly of the prisoner's own rank constituting a part of the court?—I do not think that that would be of any advantage.

563. Do you think that it would tend to give satisfaction to the prisoner?—It might do so, and I believe it is the practice of some foreign powers to do that.

564. You think it would give more satisfaction to the prisoner?—It might give more satisfaction to the prisoner, but I think *quoad* the substantial justice it would not have any effect at all.

565. But there is provision with respect to the trial of officers, or at any rate there is a practice that there should be always some of his own rank on the court?—Yes, none of inferior rank.

566. Is not the object of that to give him confidence in the tribunal?—I presume so.

567. In the same way, supposing there were persons of the same rank as the non-commissioned officer on the court-martial, would it not tend to give him more confidence in the tribunal?—I doubt it.

568. (*Lieut.-Gen. Eyre.*) The Prussian army, we will say, is composed of a very large proportion of gentlemen, and consequently you have some of the privates and non-commissioned officers to form part of the court; but then you may say the prisoner is being tried by his peers, he is himself a gentleman, although a private in the army, and those privates sitting on the court are of the same class; but we must bear in mind, must we not, how wholly differently those armies are constituted from our own?—I do not think the cases are comparable.

569. (*Lieut.-Gen. Scarlett.*) Have you ever heard of a company court-martial?—I have heard of them; but I have never seen them put in practice.

570. Do you believe that the men would have more confidence in their own class than they would if they were tried by their officers?—I do not.

571. Do you believe that they would have less confidence?—I do.

572. Do you believe the punishments would be more severe or less severe?—I believe they would be more severe.

573. (*Chairman.*) Will you now give your opinion to the Commission with regard to the punishments inflicted by sentences of courts-martial, beginning with corporal punishments. I believe the sentences for the infliction of corporal punishment are much more rare in the British army than they were a few years ago?—Yes, they are.

574. Do you happen to know in how many instances corporal punishment has been administered in the British army during the last year?—I do not.

575. You have not seen the return of those punishments which has been made?—I have not.

576. But supposing that during the past year not 20 sentences of corporal punishment have been carried out, it follows as a matter of course that some other punishment must have been substituted to a great extent for the corporal punishment of former times; do you know what is the nature of the punishments now inflicted instead of corporal punishment?—It must be imprisonment with or without hard labour.

577. Has a prisoner to undergo that imprisonment invariably at the place where he is sentenced, and under military authority?—Generally so.

578. Is there any power of having the imprisonment inflicted by the civil authority in our civil gaols?—Yes.

579. Are not prisoners sent to civil gaols?—Yes.

580. What authority have the courts-martial to send a soldier to a civil gaol?—They have none at all.

581. How do they proceed then when they wish to send a soldier who has been convicted to a civil gaol?—The confirming officer directs where they shall go.

582. What power has he to do that?—He directs where they shall be imprisoned according to the accommodation.

583. Has the confirming officer the power of ordering any prisoner under sentence of court-martial to be confined in any gaol in England that he selects?—If he has no military place to receive them.

584. If there is no military place has he himself the power of ordering it without the control of the magistrates of that part of the country?—It is an understood arrangement, provided for by the Mutiny Act.

585. But in your opinion the commanding officer has the absolute power of ordering a soldier to be confined in one of our civil gaols?—Yes, the confirming officer.

586. Could you state to the Commission what has been the effect in the British army of the great diminution of the punishment of flogging in the army; has it been for the advantage of the army or the reverse?—I should say for the advantage of the army.

587. As regards the discipline of the army do you think it has been affected in any material degree by the diminution of corporal punishment?—I do not.

588. Would you recommend any further limitation of that punishment?—I would not.

589. To what crimes is that punishment now limited?—It is limited to mutiny and insubordination accompanied with personal violence. The 22nd section of the Mutiny Act is as follows:—"Any "court-martial may sentence any soldier to corporal "punishment for mutiny or for insubordination ac- "companied with personal violence; and save as "aforesaid, and as herein-after mentioned, no court- "martial shall have power to sentence any soldier to "corporal punishment."

590. (*Mr. Whitbread.*) That is for ordinary service is it not?—That is for ordinary service.

591. (*Mr. Russell Gurney.*) What is done in the field?—It goes on: "Provided that any court-martial "may sentence any soldier to corporal punishment "while on active service in the field, or on board any "ship not in commission, for mutiny, insubordination, "desertion, drunkenness on duty or on the line of "march, disgraceful conduct, or any breach of the "Articles of War, and no sentence of corporal "punishment shall exceed 50 lashes."

592. (*Chairman.*) Then I understand that at the present moment you cannot inflict corporal punishment at home even for disgraceful conduct?—No, only in cases of mutiny and of insubordination accompanied with violence.

593. Is it your opinion that it is absolutely necessary for the discipline of the service, that that power should be maintained?—I am of that opinion.

594. Do you believe that in the course of the last year, or since the alteration of the system, there have been many soldiers tried for mutiny and insubordination who have not been subject to corporal punishment?—I am not in a position to answer that question, because for the last three years I have not been employed.

595. Can a district court-martial inflict corporal punishment?—Not unless the soldier is tried for mutiny or insubordination, with violence.

596. Can a regimental court-martial try for mutiny and insubordination?—They can on the line of march.

597. And then they have the power of inflicting corporal punishment, have they not?—Yes, when it is approved by the officer commanding.

598. Can you speak as to the repetition of the offences by the same prisoner since the alteration?—No.

599. You could not say whether the frequency of offences by the same prisoner has been greater?—I could not.

600. With regard to the other punishments which may be inflicted by courts-martial, have you any suggestions to make to the Commission for an alteration of them?—No, I have not.

601. With regard to the power of cashiering an officer, for instance, you have no suggestions to make?—No.

602. Can you speak to the expenses of our military tribunals?—I cannot.

603. At Aldershot, for instance, you have had no experience of that kind?—No; I have not been stationed at Aldershot.

604. (*Lieut.-Gen. Peel.*) Have non-commissioned officers the power of inflicting any punishment?—None.

605. They have the power of reporting to the adjutant, have they not?—Yes; it is their duty to do so.

606. Then the adjutant has the power of punishment?—Only to a certain extent.

607. What power has the adjutant?—He has none exceeding that delegated to officers commanding troops or companies.

608. Then the captain of a company can inflict a punishment?—Yes; up to a certain extent.

609. What power has the captain of a company in that respect?—He can give three days' drill and confinement to barracks.

610. Then the commanding officer has further power, has he?—Yes.

611. What power has the commanding officer?—168 hours' imprisonment, hard labour, or solitary; stoppage of pay for absence not exceeding five days; and confinement to barracks not exceeding 28 days.

612. If he thinks that there is any crime deserving a greater punishment than that then there is the regimental court-martial?—Yes.

613. What are the powers of the regimental court-martial?—42 days' imprisonment with hard labour, or solitary confinement not exceeding 14 days at a time; and stoppage of pay to make good any loss, damage, or destruction.

614. What is the next step?—The next step is the district court-martial.

615. What are its powers?—They are corporal punishment, imprisonment, with or without hard labour, and with or without solitary confinement.

616. Have they the power of inflicting corporal punishment?—Yes, if the man is tried for mutiny or insubordination with violence.

617. Have they the power of passing a sentence of death?—No; that can only be the sentence of a general court-martial.

618. (*Lieut.-Gen. Scarlett.*) Can a district court-martial inflict discharge with ignominy, and marking with the letters "B C"?—It can.

619. (*Lieut.-Gen. Peel.*) Will you state the power of a general court-martial?—Death, penal servitude, imprisonment, forfeiture of pay or pension, corporal punishment, and stoppage of pay.

620. In the case of officers, have they the power of cashiering?—Yes.

621. (*Mr. Mowbray.*) And in all cases a general court-martial can order a soldier to be discharged with ignominy without reference to the nature of the offence?—Yes.

622. (*Chairman.*) Among the punishments which a court-martial can award, there is a punishment by a pecuniary fine, is there not, upon the officer?—I see by the 17th section of the Mutiny Act, that "Any officer or soldier of Her Majesty's army, or any "person employed in the War Department, or in "any way concerned in the care or distribution of "any money, provisions, forage, arms, clothing, ammunition, or other stores belonging to Her Majesty's "army or for Her Majesty's use, who shall embezzle, "fraudulently misapply, wilfully damage, steal, or "receive the same knowing them to have been stolen, "or shall be concerned therein or connive thereat, "may be tried for the same by a general court-martial and sentenced to be kept in penal servitude "for any term not less than five years, or to suffer "such punishment of fine, imprisonment, dismissal "from Her Majesty's service, reduction to the ranks "if a warrant or non-commissioned officer, as such "court shall think fit according to the nature and "degree of the offence; and every such offender shall, "in addition to any other punishment, make good at "his own expense the loss and damage sustained; "and in every such case the court is required to "ascertain by evidence the amount of such loss or "damage, and to declare by their sentence that such "amount shall be made good by such offender; and "the loss and damage so ascertained as aforesaid shall "be a debt to Her Majesty, and may be recovered in "any of Her Majesty's courts at Westminster or in "Dublin, or the Court of Exchequer in Scotland, or "in any court in Her Majesty's colonies, or in India, "where the person sentenced by such court-martial "shall be resident after the said judgment shall be "confirmed and made known; or the offender, if he "shall remain in the service, may be put under stoppages not exceeding one-half of his pay and allowances until the amount so ascertained shall be "recovered," so that the fine is acknowledged.

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623. Do you take the words "such amounts shall be "made good" to refer to the word "fine" in the former part of the paragraph, or do you believe that a court has the power of inflicting a fine according to its discretion?—No; because it says that the "offender shall, "in addition to any other punishment, make good."

624. One of the punishments is the stoppage of pay on the part of a private soldier, is it not?—Yes.

625. Do you believe that the stoppage of pay might be carried farther than it is now, and made a more general punishment in the British army with advantage?—It depends upon who has the power of inflicting it, and how it is to be carried out.

626. Do you believe that the punishment of stoppage of pay or fine might be applied as a punishment with greater effect than it is now?—I do not.

627. You do not think that the punishment of private soldiers by the stoppage of pay might be substituted for the different punishments to which they are now subjected with the same effect as results from those punishments now?—I should not be for stopping any more pay.

628. You think it would be would be a cause of discontent amongst the soldiers if the punishment of stoppage of pay was carried farther than it is now?—I think so.

629. (*Lieut.-Gen. Eyre.*) Would it not virtually fall upon the captain sometimes?—It would.

630. (*Lieut.-Gen. Scarlett.*) Do you think that the punishments of imprisonment for periods such as two years are too long, at present?—I think they are too long.

631. Both in regard to the prisoner himself and in regard to his comrades?—Yes, you are imposing his duty upon his comrades during the period that he is so imprisoned.

632. Do you think that the prisoner derives any benefit as to his future conduct from being imprisoned, say for two years?—I do not.

633. (*Lieut.-Gen. Eyre.*) Might it not with great advantage be reduced considerably?—I think so.

634. (*Mr. Russell Gurney.*) Is as much as two years often awarded?—Yes.

635. (*Chairman.*) But if you were to reduce the punishment of a prisoner from two years would it have the same effect in deterring crime in the army?—I think so.

636. You think that one year, for instance, would have the same effect in deterring crime as two years?—Yes.

637. (*Lieut.-Gen. Eyre.*) In that case would you propose that the prison discipline should be more stringent and severe?—I think it should be carried out in its strict integrity.

638. Is there a power anywhere of remitting the sentence of two years' imprisonment?—Yes, the revising officer has that power.

639. Is that often exercised at the present time?—Yes; I should think so.

640. Do you think it is a general practice now to remit a portion of the punishment?—I think so.

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641. You would recommend, then, that the imprisonment should be for a shorter period, but that it should not be on any account remitted?—I think it should not be remitted altogether, but shortened.

642. (*Mr. Russell Gurney.*) By the 763rd Regulation it is forbidden to reprimand a non-commissioned officer by sentence of court-martial, are there not offences committed by non-commissioned officers which might be fairly met by a reprimand, and can you give any reason for that limitation?—The commanding officer has the power to reprimand a non-commissioned officer without bringing him to trial.

643. But if upon inquiry by court-martial they thought that was a sufficient sentence, is there any reason why they should not award it?—I think it would be a pity to send a non-commissioned officer to trial, if such was deemed a sufficient sentence.

644. But you assume that the commanding officer would form the same judgment upon his partial inquiry as the court-martial would upon full inquiry?—The commanding officer generally has a full inquiry.

645. But may not circumstances be elicited in an enquiry before a court-martial which would present the offence in a different light?—It might be so.

646. Can you give any reason, then, why the court-martial should not have the power of passing a sentence of reprimand upon a non-commissioned officer?—It appears to me to be taking up the time of the court unnecessarily if he should merely be reprimanded, since the commanding officer has that power.

647. Are there offences for which a commissioned officer is adequately punished by a reprimand?—So it would appear from the regulations and the Articles of War.

648. It is a regulation by which the members of a court-martial would feel themselves bound, would they not?—I suppose they would.

649. (*Mr. Mowbray.*) With respect to reductions to the ranks, do you think it necessary that a non-commissioned officer should in all cases be reduced to the rank of a private before you punish him?—Yes, I do.

650. Do you think it not desirable that there should be some reduction short of reduction to the rank of a private?—That is competent for the commanding officer, by not promoting a non-commissioned officer according to seniority.

651. But is it not equally competent for a court-martial?—I do not quite understand the question. Do you mean to say *quoad* reduction, or *quoad* ulterior punishment.

652. A commissioned officer, say a captain, is tried for an offence which the court consider is adequately met by a sentence that he be reduced, and that he be placed at the bottom of his own rank?—That is no reduction of rank; that is only placing him at the bottom of a list.

653. Do you not think it desirable that there should be a similar practice as to the reduction of non-commissioned officers in their own rank?—No; because I do not consider that it is a reduction. It is only placing him down so many steps. The captain does not cease to be a captain, he is still a captain only put down so many steps; and the commanding officer can exercise the same power towards a non-commissioned officer indirectly, by not taking him for promotion when it comes to his turn.

654. Then you argue that the court-martial should not do it because the commanding officer has the power of doing it without court-martial?—Yes.

655. But if the court-martial thinks the case is adequately met by such a sentence, can you see any reason why such a sentence should not be inflicted if it met the exigencies of the case?—I should not consider it an adequate punishment for a court-martial to award.

656. Is that the only reason you can give why a court-martial should not award it?—Yes.

657. (*Chairman.*) Has it not always been considered a great difficulty in the army, that there is no punishment for a non-commissioned officer except reducing him to the ranks?—Yes, but I do not think it would be desirable to punish a non-commissioned officer until he was reduced to the ranks.

658. Will you state the reasons why that rule should apply to a commissioned officer but not to a non-commissioned officer?—Because the officer commanding can reprimand a non-commissioned officer without the intervention of a court-martial; and no such punisment for a non-commissioned officer is alluded to in the Mutiny Act or Articles of War.

659. But would not that rule apply to a commissioned officer as well?—Yes; but a reprimand to an officer by a general court-martial is recognized by 125th Article of War.

660. But in your experience have you not found in any regiment, for instance, that you have commanded that it was very difficult to deal with a non-commissioned officer from the impossibility of punishing him without reducing him?—No doubt.

661. Could you suggest any way in which that difficulty could be met?—I could not.

662. (*Lieut.-Gen. Scarlett.*) Would there be any great objection to reducing a serjeant to the rank of corporal for any neglect of duty?—I do not see any objection to it.

663. (*Mr. Russell Gurney.*) You cannot do it now, I believe?—You cannot.

664. (*Lieut.-Gen. Scarlett.*) Putting him at the bottom of his rank would be futile, would it not, inasmuch as the man is not taken according to seniority, but according to merit for promotion?—Yes.

665. Therefore putting him at the bottom of his rank would be no punishment at all?—No.

666. (*Chairman.*) Do you not think that it might be an advantage if a commanding officer had the power to stop the pay of a non-commissioned officer for neglect of duty?—I should not advocate that power being vested in the commanding officer; I would rather leave it to a court-martial.

667. Might it not be advantageous that it should be a punishment to a non-commissioned officer that he should have his pay stopped for certain crimes which now oblige a commanding officer to reduce him to the ranks?—It might be advantageous, but I offer it merely as a speculative opinion.

668. You would not say that you would recommend it?—No.

669. (*Lieut.-Gen. Peel.*) A commanding officer has now the power of reducing a non-commissioned officer to the ranks, but he may make him a corporal again the next day, if he pleases, may he not?—A non-commissioned officer is reduced to the ranks by the sentence of a court-martial, but the commanding officer may promote him the next day.

670. (*Mr. Mowbray.*) According to that process he would first suffer the indignity of being reduced to the ranks?—Yes.

671. (*Lieut.-Gen. Peel.*) Have you not known many instances in which serjeants have been reduced and have afterwards become first-rate serjeants?—Yes, after a time.

672. (*Chairman.*) But still it does affect the position of a non-commissioned officer very much in the regiment to have been reduced, does it not?—No doubt.

673. Do you think if some punishment could be found without lowering him in the eyes of his comrades it would be an advantage?—I think so.

674. Can you suggest any other punishment but the reduction of pay which might be applied in the case of non-commissioned officers?—At this moment I cannot.

675. Is position in the regiment amongst non-commissioned officers highly valued as regards their rank amongst themselves?—Yes.

676. Is the senior serjeant looked upon with higher respect than the junior serjeant?—No.

677. Then it would not be a punishment to him to reduce him to the bottom of his rank, as you can with officers?—No.

678. (*Lieut.-Gen. Scarlett.*) Do you consider that a non-commissioned officer under any punishment would meet with the same respect from the men, and have the same authority over them?—No.

679. Do you not think that punishing him at all short of reducing him to the ranks would take away his authority?—I do.

680. And that he would not be so eligible to carry out his duties as he ought to be?—He would not.

681. (*Mr. Russell Gurney.*) There are no longer two classes in the army among the privates, are there?—No.

682. Do you think that the system of having two classes was a good one, under which all men, in the first instance, should come into the first class, and should not, until they had committed some offence, be reduced to the second?—I think it was introduced with reference to corporal punishment, but corporal punishment being now confined to insubordination or mutiny, it is unnecessary.

683. But is it desirable to have two ranks under existing circumstances?—I do not think it is.

684. (*Lieut.-Gen. Scarlett.*) In fact, are there not now three classes, namely, men at 1*d.* a day, men at 2*d.* a day, and men at 3*d.* a day, and so forth, and good-conduct pay; and does not that divide them into classes?—Such a classification exists for good-conduct pay.

685. (*Marquis of Hartington.*) But not as to punishment?—Not at all.

686. The man with 3*d.* a day and good conduct pay would be as liable to punishment as others, would he not?—Surely.

687. (*Mr. Russell Gurney.*) Do you think it would increase the facility of obtaining recruits of respectable character in the army if they knew that, in the first instance, they formed portion of a class which could not be subject to corporal punishment?—That is the case at present, except for two offences.

688. Would it, in your judgment, increase the facility of obtaining recruits of a respectable class?—I do not think it would.

689. (*Lieut.-Gen. Eyre.*) How would a scale of good conduct pay answer, in imitation of that for the privates, and made specially applicable to serjeants?—Of course, they would be liable to the deprivation.

690. They would; and moreover they would have the inducement to arrive at that good conduct pay?—In my opinion there is no additional inducement needed for that rank.

691. (*Mr. Headlam.*) I think I understood you to say that the diminution of corporal punishment had acted well for the discipline of the army, to the extent of which it had been carried?—Yes.

692. But you do not think it would act well if it were carried further?—No.

693. Have you any reason to give to the Commission for that opinion?—I do not think that for such crimes as mutiny and insubordination accompanied with violence you could give a sufficiently adequate punishment to deter men from the commission of those very grave offences.

694. Do you speak from any reference to cases that have occurred or merely from your own ideas upon the subject?—From my own ideas upon the subject.

695. You do not think that the results which have hitherto flowed from the diminution of corporal punishment apply to those larger crimes?—No.

696. (*Mr. Whitbread.*) Would it be any advantage in your opinion to retain in the service a man who is guilty of such a crime as mutiny or insubordination?—No advantage at all.

697. Would it not be an advantage instead of sentencing a man of that kind to corporal punishment to get rid of him altogether?—Yes, if you could prevent his re-enlisting.

698. (*Lieut.-Gen. Eyre.*) You might have him branded, might you not?—Even that he would get over.

699. (*Mr. Whitbread.*) Have you any other reason except that of his re-enlisting?—No, I think he would be a good riddance.

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700. (*Lieut.-Gen. Scarlett.*) But would it not in some degree encourage a man to commit those crimes?—It would have that effect. A man who wanted to get out of the service would commit these crimes.

701. (*Mr. Whitbread.*) But is not that assuming that a large proportion of the army are continually serving against their will?—I do not think that a large proportion of the British army are serving against their will.

702. Then there is no objection in your mind beyond the danger of their re-enlisting?—None.

703. Except that it would induce men to commit those crimes for the sake of getting away?—I think so.

704. That is founded upon the assumption that there are a portion of the men serving against their will, and who are really anxious to get out of the service, and who would commit such a crime to get their discharge, even though that discharge was accompanied with a term of imprisonment?—I think there are such men.

705. To any extent?—I could not say.

706. (*Lieut.-Gen. Peel.*) Those are men of bad character, are they not?—Yes.

707. (*Mr. Russell Gurney.*) And whom, therefore, it is very desirable to get rid of?—Yes.

708. (*Mr. Whitbread.*) But do you think it is likely that a man who is so anxious to get out of the service will come in again?—Yes, I do.

709. With what object?—Because they do not know what to turn their hands to. They think they can better themselves; they fail, and cannot get employed, and the alternative is to endeavour to re-enlist.

710. With regard to the imprisonment you would propose to confine the sentence to one year?—Yes.

711. Then there would be no intermediate sentence between that and five years' penal servitude?—No.

712. You do not see any disadvantage in that?—No.

713. With regard to the sentence of solitary confinement, which is sometimes given, are you aware that that cannot be carried out in the civil prisons; that there is no such punishment as solitary confinement known in the civil gaols?—I was not aware of that.

714. If this punishment cannot be carried out in civil gaols would it not be inconvenient that the court should pass it?—The confirming officer is generally aware of the circumstance, and directs the court accordingly.

715. Is imprisonment one of the punishments for ordinary drunkenness?—The commanding officer can give the man 168 hours' imprisonment.

716. (*Chairman.*) Can you try by court-martial a case of drunkenness alone?—No; unless in a case where a man is tried for habitual drunkenness, and the last instance only is proved; then they can award for that instance of drunkenness.

717. (*Mr. Mowbray.*) Then the charge is habitual drunkenness?—Yes.

718. (*Mr. Whitbread.*) Is it within your knowledge that the shot drill has been much objected to on medical grounds in the military prisons?—I was not aware that it had been so objected to.

719. (*Lieut.-Gen. Eyre.*) It is a very common thing to hear and to read of raising the *morale* of the army and making it attractive to the better classes; is that possible unless every facility is given for ridding it of the bad characters; and is not a habitual drunkard unfit to be maintained as a soldier, and should he not be discharged and marked to prevent his returning; is he not dangerous to the army and useless to his comrades while he is in prison?—I do not think you could carry out any arrangement by which you would entirely get rid of drunkards.

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720. (*Lieut.-Gen. Scarlett.*) Do not many habitual drunkards make very good soldiers when they cannot get liquor ?—Very good.

721. (*Lieut.-Gen. Eyre.*) With regard to the book called the Mutiny Act and the Articles of War, might it not be with great advantage simplified and made more clear by some easy process, such as putting the Acts and the Articles side by side, or by giving references, and also explaining paragraphs that are rather in antagonism ?—Yes, I think it could be done. Here is the 47th Article of War, for instance, which I am told there is great difficulty in reading and interpreting rightly : "Our Commander-in-Chief may, "and any officer holding a commission from us as "Commander-in-Chief of any of our forces out of "the United Kingdom may, within his command, "dispense with the trial of any soldier confessing "desertion if he shall so think fit, and may thereupon "order such soldier to serve in any regiment or "corps, and such soldier shall thereupon forfeit his "service for the period between the date of the "desertion stated in his confession and the date of "the said order to serve, and shall not be allowed to "reckon the said period as a part of the limited "service for which he was enlisted or re-engaged, or "for which his term of service may have been "prolonged, and shall also forfeit all advantage as "to additional pay, good-conduct pay, and pension "on discharge which might have otherwise accrued "from the length of his former service, and shall also "forfeit all medals and decorations whatsoever which "he may be in possession of and authorized to wear, "together with any annuity or gratuity thereto ap-"pertaining ; but any such soldier, if he shall have "subsequently performed good, faithful, or gallant "services in our army, may, on the same being "duly certified by our Commander-in-Chief, be "eligible to be restored to the benefit of the whole "or of any part of his former service, and should "the restoration be approved by us, our order for "the same will be signified through our Secretary "of State for War." Now, the difficulty which appears in reading this Article is to know what part of this service is to be restored on subsequent good conduct, whether it is the service before he confessed his desertion, or the part between his confession of desertion and his being directed to serve.

722. Should not such things be made clear for young officers ?—Certainly ; I mention it because I have heard many opinions from officers as to its vagueness.

723. (*Lieut.-Gen. Peel.*) Would the young officers have anything to do with it ?—No, except in recommending a man to the commanding officer.

724. (*Lieut.-Gen. Eyre.*) Are there not a vast number of inconsistencies which want clearing up ; for example, do you think that the 81st and 168th Articles of War are in accordance, one of which says that a man may be sentenced to deprivation and the other of which says that he shall be so sentenced to deprivation ?—Perhaps the Commission will allow me to bring to their attention the 78th Article of War, which applies to habitual drunkenness. It is at page 273. "Any soldier who shall, within 365 days, have "been drunk four times or twice drunk when on or "for duty or on parade or on the line of march, may "be charged with habitual drunkenness and be de-"prived of one penny a day of his pay for any period "not exceeding 168 days, if convicted thereon before "a regimental or detachment court-martial, and for "any period not less than 168 days, and not ex-"ceeding 672 days, if convicted before a general, "district, or garrison court-martial ; and in addition "to any such punishment the court may (if it shall "think fit), sentence such offender to any other "punishment which the court may be competent to "award." Now does that "addition" mean that you shall have exhausted the full extent of the stoppage of the pay before you add the other punishment ; or award a portion of the stoppage of the pay, and then add a punishment ?

725. (*Mr. Headlam.*) Would you make it compulsory upon the court to exhaust the stoppage of pay ?—I would.

726. Would you not think it desirable that, in some cases, they should not exhaust the stoppage of pay ?—In that case he should not get the additional punishment.

727. Do you not think it should be left to the discretion of the court ?—I think it is a pity to do so.

728. (*Lieut.-Gen. Eyre.*) When deserters confess themselves to be deserters for the first time, they are marked, do you not think that prevents a good many returning to the service from being afraid of the branding ? Supposing it to be a case of first desertion, and the man surrenders of his own accord, do you think it would be desirable to dispense with the branding in such a case ?—No, I do not think it would ; it is not obligatory to brand for desertion, but the president must write a letter to state the reason why it is not done.

729. It is obligatory to sentence them to it, is it not ?—No ; a letter accompanies the proceedings if it is not done.

730. (*Mr. Russell Gurney.*) Is any bodily pain inflicted by the act of branding ?—None, I believe.

731. (*Marquis of Hartington.*) Is there any uniform system now as to the appointment of a prosecutor in a court-martial ?—The general officer who convenes the court-martial generally selects an officer to prosecute.

732. And whom, as a general rule, does he select ?—The most competent man.

733. Is it generally the adjutant in a general court-martial ?—No.

734. As a general rule, do you think that the prosecutor has any means of making himself well acquainted beforehand with the facts of the case ?—Certainly.

735. In your opinion is any change necessary in the appointment and selection of the prosecutor ?—No.

736. (*Mr. Whitbread.*) How is it possible that a man, after once being marked, should obliterate that mark and get in again ?—I cannot tell you the mode, but they do it ; it is converted or changed into a harp, or an anchor, or something of that kind.

737. Would it not be very easy to decline to enlist a man who had any sort of mark of that kind about him ?—You might thereby lose the services of a good man who was not a deserter.

738. (*Lieut.-Gen. Eyre.*) Do you think that a well-considered scale of minor punishments would be an advantage ?—Undoubtedly. I am all for a scale of minor punishments, and that it should be quite an exceptional case when it was departed from. I think that it would be of great advantage to the service.

739. Could you suggest any such scale of punishments ?—I think the best way would be to give to experienced commanding officers the several minor offences, and to ask them to define the punishments : then to collate their opinions, and to make out a good scale, and have it universally adopted.

740. You think that the present system is not an adequate one ?—I do not ; I think that a scale would be a far preferable system.

741. (*Chairman.*) There is such a scale in the Guards, is there not ?—I believe so, but I don't think they are identical in the three regiments.

742. (*Lieut.-Gen. Peel.*) You consider that minor punishments should be regulated by a general scale and should not be left to the discretion of the different commanding officers ?—I do.

743. (*Lieut.-Gen. Eyre.*) Would not such a scale greatly aid new field officers and other field officers left in temporary command, and detached officers ?—I think it would be of incalculable benefit to the service every way.

744. (*Marquis of Hartington.*) At question 97 Mr. Lushington was asked, "What is the province of "the prosecutor ; does he appear in the light of the "Attorney-General in a case for the Queen ?" and

the answer was, "It is difficult to give a direct "answer to that question, because, as you have heard "there is no provision made for the appointment of "a prosecutor, and his duty seems to be differently "regarded in different districts. I think that Colonel "Laye will tell you that it seldom happens that "a prosecutor is properly posted up in a case; "but he does to a certain extent conduct the pro- "secution." And then further on he says: "If a "case miscarries by reason of insufficient evidence "for the prosecution, I have often seen it made a "matter of observation by the commanding officer "that the court were remiss in their duty in not "calling certain evidence. One would say, accord- "ing to ordinary notions, that was the duty of the "prosecutor, and that it would be advantageous, as "he may know all the circumstances beforehand, "and as the court cannot know all the circum- "stances, that it should be his duty to take care "that all the necessary witnesses are present." From your previous answers I conclude that you do not agree with that?—I do not.

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745. In your experience you have not seen inconvenience from there being no regular system as to the appointment of a prosecutor, and you do not recollect cases in which he was not properly posted up?—No.

746. (*Mr. Mowbray.*) Have you often seen instances where the prosecutor has been a witness?—I am under the impression that he is precluded from being a witness.

747. (*Marquis of Hartington.*) And you would not suggest any change in the present practice?—No.

The witness withdrew.

LIEUT.-COLONEL THE HON. WILLIAM HENRY ADELBERT FEILDING examined.

Lt.-Col. the Hon. W. H. A. Feilding.

748. (*Chairman.*) Will you state to the Commission what offices you have held in the British army besides your regular regimental rank?—I was Aide-de-camp at Aldershot to the Lieutenant-General commanding in 1860. I was a student at the Staff College in that year, and I have held the position which I now hold, of Assistant Adjutant-General of the Northern Division of Ireland, since July 1864.

749. In what branch of the service have you served?—In the Coldstream Guards and the line.

750. For how long?—In the line from February 1852 to December 1854, and in the Coldstream Guards since that date up to the present time.

751. Then you hold your rank in the Coldstream Guards at the present time?—I am captain in the Coldstream Guards.

752. In your office of Assistant Adjutant-General has your attention been called to the subject of courts-martial?—Considerably.

753. You have had considerable experience in them, have you not?—I have, considering the short time that I have been in the service.

754. Have you any suggestion to make to the Commission, first of all, as regards the composition of those courts?—I have as regards the reduction in the number of members composing the different courts and the manner of their constitution.

755. Will you state in detail your objections to the present system?—First, as regards the constitution of the regimental courts-martial, I have found in Ireland, where the detachments that we are obliged to make are numerous, and very small in their number of officers, that it has been very difficult, and has occasioned great expense and delay in bringing men to trial, to be obliged to assemble the number authorized by the regulations; and often we have got inferior courts together, composed of men of very short experience and short service; and I should feel inclined to make one or two alterations. For instance, at head-quarters I should rather have it composed of four officers, one being a captain of not less than a given service, say eight years, who should act as judge and direct the court on points of law and evidence, and not take any part except in the summing up as regards the finding, and who should then proceed to direct the court as regards the sentence. But in the case of detachments, the court might consist of one captain and two subalterns, provided the captain had not less than eight years' service, and the subalterns each not less than four years' actual service.

756. What would be your object in that proposal?—To avoid very many unnecessary delays and insufficient weight of the court. Sometimes in a court, for instance in a cavalry regiment which has lately come home from India, and where they have had a great run of promotion, I have seen captains sitting of three years' service and subalterns of hardly any of them more than two years, and many of them hardly a year, who were utterly incompetent, in my opinion, to carry weight as a tribunal with the soldiers.

757. Would it be always easy to get a court constituted as you have suggested?—It would not. Many regiments have not above two captains of eight years' service; but still I would rather use them, and take them off other duties, and so give greater weight to the opinion of the court.

758. But supposing that a regiment was quartered in a district with only two officers of the requisite number of years' service which you suggest, would not the whole of the duty fall upon those two officers of the regiment?—Not necessarily I think.

759. How would you provide for it otherwise?—Because, in many instances, we have to bring prisoners into head-quarters to be tried; there are no cells for them to undergo their punishment in at their detachments.

760. But as regards the composition of the court, would it not be almost impracticable in certain stations to form any large number of courts with the limitations you have suggested?—I do not think so; but it is a regimental arrangement that the senior captain should take a great deal of the court-martial duty, and be let off the other duties, which the other captains should take. It might be inconvenient in the cavalry, where the captains have to attend so much stables; but that might be arranged by the commanding officer. I am only looking towards getting a weighty opinion from the court.

761. (*Lieut.-Gen. Scarlett.*) Have you seen any injustice done arising from the youth of the members?—I have very often seen incorrect decisions come to.

762. (*Mr. Whitbread.*) Have they been corrected on revision, or have they stood?—It is impossible to give a general answer to that, because it depends so much upon the commanding officers, and some courts are obstinate.

763. (*Chairman.*) Mr. Whitbread's question was to this effect: whether in practice those improper decisions on the part of the courts have been corrected by the revising officers?—Theoretically they are corrected, and it is to be hoped that it is done; but it is impossible to give a general answer.

764. (*Lieut.-Gen. Eyre.*) Are you speaking of regimental courts?—Of regimental courts.

765. (*Chairman.*) Have you any suggestions to make with regard to district courts-martial?—Yes; I would suggest that a field officer or a captain of not less than ten years' service should be president put upon the same roster, and four subalterns of not less than four years' service; and that on a general court-martial a field officer of not less rank than a colonel should be president; and that there should be not less than two field officers, two captains of not less than six years' service each, and two subalterns of not less than four years' service each.

766. Do you recommend that with the same object as before, viz., of giving greater weight to the decisions of the court?—Yes; and to avoid delays in the assembling of the court.

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767. (*Mr. Russell Gurney.*) In each of those cases is the presiding officer to take no part except in the summing up and direction?—No part except in the summing up and direction.

768. He is not to vote?—He is not to vote.

769. He is to be the judge, and they the jury?—Just so.

670. (*Chairman.*) Why do you exclude the president from giving a vote?—I think he is likely to be biassed in making his directions to the court if he has the casting vote. It gives him a double power at present.

771. (*Mr. Mowbray.*) Would you constitute those courts of an uneven number?—I would constitute them of an uneven number.

772. Then if the president has no vote there would be always the danger of the court voting two and two, would there not?—Regimental courts-martial are to consist of four members.

773. But I thought I understood you that the district court-martial was to consist of an even number?—I am only suggesting that the president in a regimental court-martial should act as judge.

774. (*Chairman.*) Would not that plan of yours involve us in this difficulty, that for the sake of the casting vote of the president you lose the best opinion in the court.

775. When you get an officer of so much superior standing to those in the court I should think his opinions are generally taken, though I have seen instances of an obstinate subaltern directing the whole court; but at the same time do you not lose, by excluding the president of the court from voting, the best opinion in the long run that there is in the court as regards the finding?—You may do so; but I still hold to the idea.

776. Have you any other suggestions to make with regard to courts-martial?—As regards the alteration of their powers, I should give the regimental court-martial more power. I should divide the powers of courts so as to raise the importance of the general court-martial, which always used to be thought such a very solemn proceeding, so that it should only try such cases as were absolutely necessary to be tried by a general court-martial. The men used to look up to that court and consider it as the most solemn thing that could possibly happen to them to be taken before a general court-martial or even before a district court-martial.

777. Do you think that feeling has ceased to exist?—In a very great degree, I think.

778. Owing to what circumstances?—It is impossible to say; but I should feel inclined to give the regimental court-martial power to try prisoners for the crime of desertion (which, after all, is a regimental offence), and of making away with necessaries when not aggravated by any other crime.

779. (*Mr. Mowbray.*) Then you think that there are many offences that are now tried by general court-martial which had better be tried by district court-martial, and that many offences tried by district court-martial which had better be tried by regimental court-martial?—Yes, I would give regimental courts-martial power to give eighty-four days, with or without the proper proportion of solitary confinement, and of branding with the letter "D."

780. (*Lieut.-Gen. Eyre.*) You think that regimental courts-martial are not sufficiently formidable and solemn?—I think not; and I think that the method of employing very young officers to sit upon them conduces very often to levity. Then as regards the power of district courts-martial, they should have power to sentence to corporal punishment for cases of gross or repeated acts of insubordination, and power to sentence to five years penal servitude, and general courts-martial should have power to sentence as at present.

781. (*Chairman.*) With regard to the proceedings in the court, are you of opinion that the mode of giving evidence at the present time is one that should be continued, that is to say, of taking down the questions and answers in writing?—It is tedious; but I think it is due to the prisoner that the questions should be put in writing, because there are some people who are appointed prosecutors who have no knowledge of framing a question legally and properly, and very often they are apt to put questions which are so improperly framed as to prejudice the case of the prisoner very much, and such as the Deputy Judge Advocate would never allow to be put upon record; and therefore I think he should have the duty of seeing whether they are legal or not; or, perhaps, if the Judge Advocate-General knew the prosecutor with whom he was dealing, he might dispense with the questions being put in writing.

782. Might not that difficulty be met in another way, by allowing the prisoner to have a friend to take charge of his case for him?—But very often the prisoner's friend might not himself have sufficient knowledge. I think it would be better to leave it in the impartial hands of the Deputy Judge Advocate, who I have always found acted very impartially in those cases.

783. (*Mr. Russell Gurney.*) Is the question not read aloud until it has been submitted to the Deputy Judge Advocate?—No.

784. (*Lieut.-Gen. Scarlett.*) If that was done *vivâ voce* could it not be stopped by the Deputy Judge Advocate?—Unfortunately the harm is very often done, or at least it has been done in peculiar cases.

785. (*Chairman.*) Is not that an objection which applies also to our civil courts and to trials of every kind?—I have seen it very often used with very great effect by lawyers to prejudice the case of a prisoner by putting a question *vivâ voce* which they knew would not be allowed to be put, in order to influence the jury.

786. Do you think that the military tribunal is superior to the civil tribunal in that respect, that you cannot so take an advantage of a prisoner?—Most undoubtedly. I think that every chance should be given to the prisoner.

787. Therefore you differ from one of the former witnesses in saying that now that shorthand writers are admitted into general courts-martial the old system of writing the questions and answers might be dispensed with?—It certainly gives you great assistance to have the answer taken down by a shorthand writer.

788. Then it is only the questions that you would have written?—Only the questions.

789. But not the answers?—No.

790. You think that every question should be submitted to the Judge Advocate before it is put?—Yes.

791. But in your practice have you not found that the present system of writing down questions and answers tends very much to lengthen the proceedings of a court?—It does; but in the important cases which I have in my mind I think that it would have gone very hardly out to the world if certain questions which I myself would have put, not being well up in the law at the beginning, had not been refused; they certainly would have tended to prejudice the proceedings of the court-martial in the eyes of the public; and, although I was very often pulled up for it, I was afterwards very thankful that I had been pulled up for it.

792. Then you do not think it is advisable to place a court-martial under the same rules and regulations as our civil courts in that respect?—No, not in that respect, except with the permission of the Deputy Judge Advocate. The Deputy Judge Advocate might know his prosecutor, and might confide in him; but I would leave it entirely in his hands, or in the hands of the president, to decide whether a question should be put *vivâ voce* or not; and the responsibility would then rest with the Deputy Judge Advocate.

793. Is it not in your experience that the length of the proceedings of courts-martial has been found to be a very great hardship upon the prisoners tried before them?—I should not say so. I think that

they felt that they were getting a fairer and juster trial. The longest lasted a month, but that was owing to delays which were very often asked for by the prisoner.

794. Does it not very often happen that the delay is asked for by the prisoner in consequence of his feeling that he himself has not been adequate to the examination or cross-examination of the witness for the prosecution?—I should not say so. I should fancy that he had more time to reflect upon the questions and answers given when the questions were taken down in writing. My own practice was before I went into court in the morning, in fact, before I took the case into court, to write down every question which I intended to ask. Very often I tore them up, finding them to be unnecessary, so that no time was lost in that way, except very rarely when I had to re-write a question. Sometimes it was illegally written in the first instance, and I had to remodel the question.

795 (*Lieut.-Gen. Scarlett.*) You have had great experience, have you not, in Ireland lately as prosecutor in several trials?—Yes, I had four months in one year and two months in another year continuously.

796. (*Mr. Mowbray.*) You have acted as prosecutor in several very important trials lately in Ireland?—Yes.

797. And in some of those cases I believe you have yourself had legal assistance?—Yes, in three cases.

798. In those cases has the prisoner also had legal assistance?—Yes; in all the cases in which I have prosecuted I think he had legal assistance.

799. Has the Deputy Judge Advocate also had legal assistance?—Yes.

800. What is your experience of the effect of having that legal assistance; do you think that it has made the proceedings more regular?—Yes; I dispensed with legal assistance after the first two or three cases, except in one very important case, on condition that the Deputy Judge Advocate was assisted by a barrister as adviser to keep me from going wrong and from putting illegal questions.

801. You considered that you were yourself sufficiently competent to conduct a prosecution, provided that the Deputy Judge Advocate had legal assistance to keep the court straight?—I thought so, with this proviso, and I considered that the effect upon the service would be greater if the prosecution was conducted by an officer, and not upon what one may call legal technicalities, and that the effect of a conviction without legal advice on the prosecution would have a greater effect upon the men, than a prosecution conducted with the assistance of legal advice.

802. In all those cases where you have had assistance you have yourself opened the case, and you have examined the witnesses, have you not?—Exactly so.

803. But the legal adviser has assisted you in framing the questions?—Yes, and in replying to legal points with which I was not conversant which were raised by the legal adviser of the prisoner.

804. In all those cases you have had a shorthand writer, have you not?—There was one for the court.

805. Do you have think that that has very much facilitated the proceedings of the court?—I think so.

806. Do you think that it would be possible to introduce it at all general courts-martial?—Certainly.

807. How far could you carry it in district courts-martial?—I would let it be in the power of the general commanding the district to recommend that a shorthand writer should be employed, generally his staff would know whether or not the case was likely to be prolonged and whether it was a difficult and intricate one, and the general would be in a position to advise.

808. You have been asked as to the length of trials, is not one cause of the length of trials the short number of hours during the day during which the court sits?—We sat from 10 o'clock till 1, and from 1 o'clock till 4, for nearly four months.

809. Are you aware that in the Articles of War for the present year it is proposed to give the court power to sit after 4 o'clock?—I am not aware of it as yet, I have not had time to look into it.

810. Do you not think that it often causes inconvenience that the sittings of court are so short?—Very often indeed, and I should be very sorry to see it limited to one hour.

811. And it often happens perhaps that a witness is under examination or cross-examination and the examination is interrupted, and the witness may be tampered with before the next day?—Exactly so, and that was my reason for making that remark.

812. So that it is most important, is it not, that the court should be able to prolong its sitting, if it is merely for the purpose of concluding the examination of a witness?—Exactly.

813. (*Lieut.-Gen. Peel.*) The offences upon which you have been employed as prosecutor in Ireland have been of a peculiar character, have they not, and not ordinary military offences?—Yes.

814. And therefore they have required in more than ordinary cases the assistance from counsel have they not?—Yes.

815. With regard to regimental courts-martial, you propose that there should be always a captain of a certain number of years service; of course you mean general service, and not only as captain. To whom would you leave the selection of the officers to perform that duty; because it is not always a senior officer who is the most competent?—There should be a roster of all those officers above that length of service, and they should be taken in regular turns.

816. But do you consider that their standing is sufficient to ensure their being competent to perform the duties?—I think so; I think that one ought to prevent the soldiers as much as possible from supposing that the commanding officer can influence the president of the court, which they are rather apt to fancy may be the case if they see a very young officer sitting.

817. But they are always taken by roster now, are they not?—Yes, but a soldier is very apt to fancy that the commanding officer has undue influence over a very young officer.

818. Has the commanding officer generally more influence over the junior captains than over the senior captains?—Generally I think he has as regards those things.

819. (*Viscount Eversley.*) Would not that throw a very heavy duty upon officers of that standing?—It might be made up to them in other ways.

820. (*Lieut.-Gen. Eyre.*) What is your opinion of the manner of taking votes at courts-martial?—I think it very indifferent under the present system. I do not like its being done *vivâ voce* at all.

821. (*Chairman.*) In what way would you take them?—I would let each man write his vote upon a piece of paper and send it up folded to the president without any consultation, after having been directed by the president as a judge directs a jury; and let each man without any individual consultation, after collective consultation, write his vote down.

822. But the great advantage of a jury is supposed to be that it has the power of discussing the points together before it pronounces its sentence?—Yes; but let them do it collectively and then register their votes separately; let them talk over the matter and vote without saying what each man intended to vote.

823. (*Lieut.-Gen. Scarlett.*) What do you conceive to be the inconvenience of the present practice of beginning with a junior and taking the votes *vivâ voce*?—I have seen men lean towards the opinions of others, simply because they have not taken the pains to follow the proceedings. They have read a newspaper and have not been very attentive to the proceedings, and they have taken the opinion of the man next them or some other man.

824. Do you not think that by taking them as we do at present the younger ones are not influenced by the opinions of the older ones, and that the older ones correct the opinions of the younger ones as it goes

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upwards, the president being last, and that they are so more likely to come to a just conclusion?—But would it not do equally well if each man recorded his vote upon paper, and if no one knew what his neighbour's vote was, and they were passed up to the president?

825. (*Mr. Russell Gurney.*) Would you think it desirable that young officers should not have the advantage of discussing the question with those superior in judgment to themselves?—They would discuss it; I think that is a very great advantage.

826. (*Lieut.-Gen. Scarlett.*) That they have at present, have they not?—Yes.

827. (*Lieut.-Gen. Peel.*) I understand you to propose that, after having consulted together, instead of each being asked for his vote, each should write down on paper "guilty" or "not guilty," and hand up his vote?—Exactly so.

828. (*Mr. Headlam.*) I understand you to think that a shorthand writer is a matter of convenience?—In certain cases.

829. Is it not of consequence that there should be a full and complete record of the proceedings of the trial?—Yes, with certain exceptions.

830. What exceptions?—In the case of a man pleading guilty I should think, unless there was some very good reason to the contrary, that I should proceed at once to take evidence as to character and former service, and then sentence, without going into details.

831. Do you not think that they should go into the facts in the case of a man pleading guilty?—Not unless the president and prosecutor thought it necessary.

832. In a case of that kind do you think that there would be no necessity for examining the facts?—Yes; but not usually in cases of desertion and making away with necessaries, and in cases of habitual drunkenness.

833. Are there not cases where a man pleads guilty when an examination of the facts is necessary before awarding his punishment?—Yes; but then the prosecutor will say that this is a special case.

834. But in other cases is it not necessary to go into the facts?—I think that in other cases it may not be necessary to go into facts.

835. In other cases where a man does not plead guilty would you not think it necessary that there should be a complete record of the proceedings for the opinion of the revising officer, and for the opinion of the Judge Advocate-General afterwards?—Certainly.

836. And that would be done most conveniently by having a shorthand writer, would it not?—It would.

837. But in cases where it was not worth while to go to the expense of a shorthand writer, then it should be done by somebody else?—By anybody rather than by the president. I would never let the president take down the proceedings.

838. With respect to delicate and complicated cases, such as occur now and then, you are aware probably that many of those cases have failed. Such cases, for instance, as those where the conduct of an officer has been impugned; that many of those cases have lasted for a long time, that difficult questions of evidence have arisen upon them, that irrelevant issues have been raised, and that dissatisfaction has been given at the trials?—Yes.

839. With respect to cases of that kind have you any suggestion to make for the improvement of the proceedings?—I fancy that there is a very great improvement, which has not yet been able to show its fruits to any great extent perhaps, which was made last year by the Horse Guards' circular as to Judge Advocates and their position in the courts. I think the presidents, as I have often seen, were inclined rather to pit their opinions and those of the court against that of the Judge Advocate, but after all the Judge Advocate is supposed to be a competent person.

840. Do you think that it would be an improvement if in cases of that description the functions of the president and of the Judge Advocate were united in one person, and that person a civilian of position and station, say, for instance, a Queen's Counsel, appointed specially for the occasion?—I did think so once, but I do not think so now; I thought so before the last general proceedings, but I have changed my opinion.

841. Supposing that a trial of that kind was assimilated as nearly as possible to a great civil trial; that is to say, that a judge presided, and that there was a counsel for the prosecution and one for the defence, and that the officers summoned filled the position of a jury, and that the judge decided all questions of law and evidence and then charged the officers as a jury, and that they upon that gave their verdict of guilty or not guilty; if the trial was conducted by a gentleman of the position which I have mentioned, do you think that would be an improvement?—I think not; I should be very sorry to see it done.

842. Do you think that it would take it too much out of the army?—I think it would take it too much out of the army. I think that if the Judge Advocate was assisted by the best counsel that could be got it would be as much as was desirable.

843. Would you allow anybody to address the court, either on the side of the prosecution or on the side of the defence, except military men?—No, I would not. In the instances which I have seen where it has been done and where a speech has been written by a lawyer for a man on his defence, it has always been very unfavourably received by the court, and it has tended very much, I think, to disfavour the court in respect to the prisoner.

844. (*Chairman.*) Is it the case that no person may read the defence except the prisoner himself?—Any friend or any member of the court may read it at the request of the prisoner. I have seen it done repeatedly.

845. (*Mr. Russell Gurney.*) It must be a military friend?—It must be a military friend.

846. (*Mr. Headlam.*) So that according to the present practice nobody can address the court except a military man?—Nobody can address the court except a military man.

847. And you would adhere to that recommendation?—I would.

848. And that legal advice should not appear in the shape of direction of the court?—Certainly.

849. (*Mr. Whitbread.*) Is the prisoner allowed to have a friend and a legal adviser too?—As many friends as he likes.

850. (*Chairman.*) Had you much experience of the system before the present rule with regard to the Deputy Judge Advocate was adopted?—It was adopted just about the middle of the trials. I think I had heard very unseemly disputes previously to the issuing of that order between the Judge Advocate and the president of the court and the members, and I thought that it was high time that such an order came out to define the position of the Deputy Judge Advocate.

851. Have you had experience of it since?—No, I have not seen it; the first time that it was attempted the order was read and settled the question.

852. Could you put in a few words before the commission, the exact defect which has been remedied by that order?—The previously undefined actual position with respect to the court which the Deputy Judge Advocate generally held.

853. I believe that up to that period it was not quite certain whether he was not both prosecutor and legal adviser of the court at the same time?—Yes, and defender of the prisoner.

854. Will you state the limits of his office at the present moment since that order was issued?—They are contained in paragraph 771, section 14, of the "Queen's Regulations."

855. Do you think that order has increased the expense of the inquiry; has it rendered it absolutely necessary for every prisoner to call for some friend or some adviser?—On the contrary, I should think that the prisoner feels more secure in his present position than he did before.

856. In what exact respect?—I should think that he feels that there is a man appointed to watch over the proceedings, and to see that no illegal question is put either to the prejudice of his case or unduly to force the prosecution.

857. But the duty of the Deputy Judge Advocate now is to give a legal opinion to the court independently of the prisoner, is it not?—Exactly so.

858. Being obliged to give that opinion he must be precluded from taking advantage on behalf of the prisoner of any circumstances which may arise in his favour?—Not by regulation and by practice; I think that you will find that on the contrary the Deputy Judge Advocate would frequently come to the prosecutor and say, "Do you not think that it is "better not to press that question?"

859. (*Lieut.-Gen. Eyre.*) Does not his appearance in court give confidence to the prisoner?—I think so, certainly.

860. (*Chairman.*) You think that the alteration has been essentially for the benefit of the prisoner?—Certainly.

861. (*Mr. Russell Gurney.*) Has it had any effect in lowering the position of the president?—Some presidents think so, and other presidents are very glad of it. I have seen both instances.

862. Where, for instance, the Deputy Judge Advocate is of very inferior rank in the army to the president, is the effect good?—Now we have Deputy Judge Advocates who have a high rank.

863. You have in Ireland?—Yes, and in England too.

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864. But taking India for instance, what is the case there?—I am unable to give an answer about it for I have never been in India.

865. You cannot form an opinion of the effect of having not a trained Deputy Judge Advocate but an officer of very inferior rank over-ruling the president?—I was under the impression that those officers in India were specially educated and trained for the purpose.

866. (*Lieut.-Gen. Peel.*) By whom are the Deputy Judge Advocates selected?—I am unable to speak upon the question.

867. By whom were you appointed prosecutor in those cases?—By the Commander of the Forces in Ireland.

868. As Assistant Adjutant-General?—No, not *ex officio*.

869. Were you ever appointed out of your own head quarters?—No; they wanted to send me down, but I objected. I said that I thought it would be unadvisible.

870. (*Mr. Mowbray.*) Do you consider that the powers which are given to the Judge Advocate under the present regulations are such that the prisoner feels greater confidence in the impartiality of the court?—Undoubtedly.

871. And that its members are more sure to be guided by legal rules and are not likely to receive improper evidence?—Certainly.

872. In fact he feels the same confidence which a prisoner brought to the bar of a criminal court feels in the legal knowledge and impartiality of the presiding judge?—Exactly so.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Room E., House of Lords.

Monday, 30th March 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
THE RIGHT HON. RUSSELL GURNEY.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

LIEUT.-COLONEL THE HON. WILLIAM HENRY ADELBERT FEILDING recalled and further examined.

873. (*Lt.-Gen. Scarlett.*) In your practice have you had an opportunity of seeing the proceedings of a great number of district courts-martial?—I have.

874. Do you find that there is any uniformity of sentence for the same crimes, or that there is a great difference in the sentences?—I regret to say that there is a very great difference.

875. To what do you attribute that difference?—To a variety of causes: sometimes to indifference on the part of the court, or to their not having sufficient practice, or to their taking different views of the gravity of the same crime. I have seen as much difference as a month or six weeks or even two months' imprisonment for the crime of desertion in the same district.

876. (*Lt.-Gen. Peel.*) Is the question of character taken into consideration at all as regards the punishment?—Yes.

877. That would make a difference of course?—But, *cæteris paribus*, all the other things being the same, character and everything being the same, still in different parts of the district I have seen different sentences.

878. (*Mr. Headlam.*) Do you think that the court is influenced by anything which is known about the man other than what is in evidence before them?—I think that it would be difficult to prevent their being influenced.

879. In some cases it may be that the court knows that the man has a bad character independently, and that they give him a greater punishment?—I think they do.

880. (*Chairman.*) Does that difference of sentence occur more frequently in regimental courts-martial than in district courts-martial?—I do not think that I have ever noticed the subject so much in regimental courts-martial.

881. But in a district court-martial it is seldom that the whole court know much about the prisoner, is it not?—I think that, generally, two or three of them, if not more, would know all about the prisoner.

882. Do you mean the members of the court?—The members of the court.

883. Previously recorded punishments are invariably noticed in courts-martial, are they not?—They are put in as part of the evidence.

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884. But I understand you to say that, besides the recorded transgressions of the prisoner, his general character, as known in his regiment, is taken into consideration?—In some regiments it is taken from the adjutant; but in other regiments an excellent plan is pursued of its being given by the captain of the prisoner's company who appears.

885. That, I presume, is taken where the captain of his company is called to give evidence as to his character?—Just so; but in most cases it is the adjutant who gives evidence as to the man's character.

886. (*Lt.-Gen. Scarlett.*) But invariably some one is called as a witness to character?—Invariably.

887. (*Chairman.*) Is it invariably the case that some one is called to character for the prosecution?—It is after the finding. It is with a view of increasing or mitigating the sentence.

888. The court calls for it of itself?—Yes.

889. It is not brought merely as evidence for the defence?—No, unless it is specially called for by the prisoner.

890. (*Lt.-Gen. Peel.*) The prisoner has always an opportunity of calling evidence as to character, has he not?—Always.

891. (*Viscount Eversley.*) If there were any question about the law of the case before the court-martial, would not that be decided by the Deputy Judge Advocate?—It is he who directs the court in cases of law.

892. (*Lt.-Gen. Scarlett.*) That is in a general court-martial?—That is in a general court-martial.

893. But in a district court-martial there is no Deputy Judge Advocate, is there?—No, it is only in general courts-martial.

894. (*Chairman.*) With regard to military punishments in general, have you any suggestions to make, either with regard to the nature of them or the mode of carrying them out?—As regards habitual drunkenness, I should like to see the punishment for that altered a little.

895. What suggestions have you to make with regard to the trial and punishment of offenders in the case of habitual drunkenness?—I should like to see more power given to the commanding officer as regards the stoppage of pay for habitual drunkenness; that he should be able to stop a man's pay as if he had been tried by regimental court-martial, that is to say, 1*d.* a day for 168 days, the man, of course, always having the option of being tried by court-martial if he should elect to be so tried. At present the commanding officer has no power to stop the pay for habitual drunkenness at all. A regimental court-martial can stop (1*d.* a day) up to 168 days, but not beyond that time, for habitual drunkenness. The district court-martial can sentence to deprivation of a penny a day for 672 days. I would propose that the commanding officer should have the power to stop 1*d.* a day of the pay of an habitual drunkard for 168 days, and that the regimental court-martial should have power to sentence the prisoner to stoppages varying from a penny a day for 168 days for the first offence, and for the second offence from a penny to twopence a day for the same period, because, as they have increased the soldier's pay now, I think you might increase the stoppages. What you want to do is to take away from an habitual drunkard the means of obtaining liquor. Very often some of the best and cleanest soldiers are drunkards. I have seen many such cases. I recollect one case in my former regiment where a man had been twenty-seven times tried for drunkenness during his service, and yet he was the cleanest soldier in the regiment; I never saw a cleaner or a better soldier when he was sober.

896. (*Lt.-Gen. Peel.*) In no case would you give the commanding officer the power of inflicting a stoppage of 2*d.* a day?—No.

897. Would you go beyond that at all, because you are only taking away from him now the additional pay which was granted last year?—The district court-martial might sentence to stoppages in the same proportion.

898. Would you go beyond that to 3*d.* a day?—I would not go any further. You then come too hard upon the captains of companies, I think.

899. Supposing you put a man under stoppage who is in debt, that wipes off the stoppage, does it not?—I think it is credited to the Government, and I do not think the captain of his company touches the man's pay until he has cleared off his stoppage.

900. Then how would it be a hardship to the captain of his company?—He would be longer in being repaid any stoppage that there was for clothing or necessaries.

901. (*Mr. Russell Gurney.*) By the fact of the stoppage?—Yes; he has to pay the Government stoppage, which he is sentenced to by the court, before he pays any stoppage to his captain.

902. (*Lt.-Gen. Peel.*) That stoppage goes direct to the Government, does it not?—Yes; which I think it is a hardship.

903. (*Chairman.*) Do you think that this increase of stoppages, either on the part of the colonel or of a regimental court-martial, might be applied to some object which is for the general benefit of the soldiers of the regiment, and that they should be made acquainted with that fact?—I should be very loth to propose such a thing, because the men might think that the colonels were rather down upon them in order to get the money, and it is very essential that a soldier should never think that there is the smallest interest on the part of the colonel to touch his pay.

904. But this object to which I am alluding would be for the benefit of the soldiers themselves, for the public amusements in the regiment, or libraries, or some advantages for the soldiers themselves?—If you could have pattern commanding officers it would be a very good thing, but I am afraid it would hardly do to trust to the whole lot of commanding officers. It is a very wide margin to say "for the amusements of "the regiment."

905. I only instanced the amusement of the regiment as an illustration; but are there not several modes in which a subscription might be got up in a regiment for something that would be generally popular amongst the soldiers, and might not the stoppages of pay be applied to that fund?—It would be certainly very advisable to do it, but I think it is a very hazardous thing to touch.

906. Do you not think that it might have a great effect in stopping drunkenness?—In that case I should be inclined to vest that money in a committee, and let the colonel have no control except the power of veto, putting it entirely out of the power of the colonel to dispose of the money, and let it be disposed of by a committee of officers.

907. Would there be any objection to letting it be disposed of by a committee of private soldiers, or would that be contrary to the discipline of a regiment?—I think it would.

908. (*Lt.-Gen. Peel.*) I understand you always to couple your objection to this appropriation of the stoppages with your plan, that the commanding officer should have the power of causing the stoppage in the first instance?—Yes; I do not like the same man who has the power of causing the stoppage to have the direction of it afterwards.

909. But if the stoppage were by court-martial then the objection, which you raise as to the colonel being down upon them, would not arise at all, would it?—It would not.

910. (*Lt.-Gen. Scarlett.*) You would not object to let the court-martial have the power if it were done by court-martial?—I would not object then at all.

911. Do you think it would have any restraining effect on drunkenness, the men knowing that the fine would go to the benefit of their comrades?—No; I am afraid it might possibly act as an incentive.

912. (*Mr. Russell Gurney.*) But it might be a motive, might it not, for the other soldiers to assist in bringing such a man to justice?—There is no difficulty in bringing them to justice.

913. Their feeling would go with the punishment rather more, would it not, if it went to the general benefit of the regiment, rather than to Government?—Yes, it might do so; but I am afraid the *cons* would rather outweigh the *pros*.

914. (*Chairman.*) Is there any other punishment that you would suggest for drunkenness, or habitual drunkenness?—For slight cases of drunkenness, that is when a man comes into barracks at night so slightly drunk that it is quite a question whether he is in liquor or not, in some regiments they confine a man for the very smallest taint of liquor which there is upon him. They put him in the guard-room the whole night with other people very much more drunk than himself; probably the men are sick over him, and spoil his tunic and clothing. The doctors say that it has a very injurious effect upon them very often when they are a little in liquor to put them in the guard-room for a night, and I should be inclined to let such men go to their barrack-room, and be dealt with in the morning. Very often the soldiers will not stand a man's coming in a little drunk, and they correct those things themselves very much. With respect to absentees also, if a man, who was absent an hour or two at tattoo, was sent to his barrack-room to pass the night in his bed as usual, the men in his room would soon let him know, I think, if he was in the habit of doing this, that they would not be disturbed in the night by men constantly coming in late.

915. But would their objection apply in so slight a case of drunkenness as you have described?—They would soon let the objection take a tangible form, I think; there are no people who punish so severely as private soldiers among themselves.

916. Is that a crime which the private soldiers of the British army think very seriously about?—The crime to them would be disturbing their comrades at night after they had gone to bed. The doctors have decidedly recommended, on two or three occasions in Ireland, that in such cases the men should not be sent to the guard-room.

917. (*Lt.-Gen. Scarlett.*) Would it not be difficult to draw the line when the man was to go to the guard-room, and when he was to go the barrack-room?—I think that might be left to the discretion of the serjeant commanding the guard, he deals impartially with men of all regiments.

918. Are you aware that it is done differently in different regiments?—Yes. At present the serjeant is afraid of letting anybody pass into barracks upon whom he finds the smallest taint of liquor for fear he himself should get into trouble.

919. (*Chairman.*) Do you believe that the crime of drunkenness is on the increase or on the decrease in the army at the present time?—You must treat that question locally.

920. Should you, from your general knowledge of the army, say that the crime of drunkenness is on the increase?—I think we can scarcely give a fair answer to that question yet, because the men have hardly yet got over the advantage of having this extra pay. It certainly was very much increased at first, because men had a large amount of pay due to them, and coming into their hands all at once, they spent it, and there was a great deal of drunkenness. Many commanding officers gave the whole of the pay to the men at once, and they were in a state of drunkenness for, perhaps, a fortnight, and then they turned sober again. But it is hardly fair, I think, to give an opinion now.

921. (*Lt.-Gen. Peel.*) In fact they received back pay, did they not, from the 1st of April?—They did.

922. (*Chairman.*) Are you enabled to give the Commission any information with regard to the crime of drunkenness, and the punishment of it in any foreign army?—Not with certainty of late years, but it is very rare in other armies.

923. You do not know anything of the Russian army, do you?—Not since the Crimean war.

924. (*Lt.-Gen. Eyre.*) The pay too is much smaller in foreign armies, is it not?—Yes.

925. (*Chairman.*) You do not know what is the punishment, for instance, in the Russian army for drunkenness?—I do not.

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926. Do you know what the punishment is in any of the other European armies?—Not at the present time. I have been out of the way of studying foreign armies since 1862, but I believe that a great change has taken place everywhere since that time.

927. Upon that particular point have you any other suggestion to make?—Not as regards drunkenness.

928. The next crime which I will take is insubordination; have you any suggestions to make with regard to punishment for insubordination?—I regret exceedingly to see that they have taken away the flogging; I think it was really a necessity.

929. Do you believe that any other punishment can be substituted of equal efficacy for cases of violent insubordination?—Certainly not. I do not think that there is anything which can take the place of flogging.

930. With regard to insubordination, do you know what is the practice in any foreign army; in the French army, for instance?—Striking an officer is death.

931. Is that punishment carried into execution?—It is carried into execution.

932. Can you speak to that from your own knowledge?—I have never seen it carried into execution, but a man came and told me one day that he had been at a death parade of two soldiers, and I believed him.

933. (*Mr. Russell Gurney.*) Was that in actual service, or in time of peace?—It was in Paris that he told me. It was carried out at Vincennes.

934. (*Chairman.*) Will you state any other reason which you have for regretting the abolition of punishment of flogging?—I think that there were some men for whom no other punishment had any terror. I have seen men who had gone through a long course of punishments, and, in fact, had passed most of their time either in prison or in hospital, and who had at last been brought to their bearings by floggings, and had after that turned round and been excellent soldiers. I have a case in my mind at this present moment of a man who was eight years in the service, and the whole service which he was allowed to reckon was two years and 25 days. I think he had been twice flogged, and the commanding officer sent and spoke to him without any non-commissioned officer being in the room, as is usual, and pointed out to him his service, and told him that he should have to get him dismissed from the service with ignominy. The man has turned round, and is now about to be made a corporal, after having been a long time clear of the defaulters' book.

935. Do you think that there are many instances of that kind in the army?—I have known several, but that has occurred quite lately. I do not think that it is the flogging that disgraces so much as the crime.

936. (*Mr. Russell Gurney.*) Then in that case the threat of dismissal seems to have produced the effect upon him?—No, I think it was the judicious treatment of the commanding officer in speaking kindly to the man in an unusual manner.

937. (*Lt.-Gen. Peel.*) Independently of the effect which it has upon the man flogged, what effect do you think that witnessing corporal punishment has upon the rest of the regiment?—I think that they hate it. There is nothing that they hate so much as a punishment parade.

938. Do you think that it has the effect of deterring crime on the part of others?—I should think that it would have that effect upon individuals, but hardly upon the regiment.

939. (*Maj.-Gen. Horsford.*) Do you think that good soldiers consider it a necessary punishment?—I do.

940. (*Mr. Russell Gurney.*) Do you think that the continuance of it has any effect in preventing the obtaining of good recruits?—I do not think so, as it was arranged last year. It was only to be inflicted for

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mutiny or gross insubordination coupled with personal violence.

941. Do you think that was a good plan which was adopted at one time of confining it entirely to those who had been already removed from the first class?—In some instances it had a wonderful effect. I recollect recommending its being carried out in some cases where a whole regiment used to suffer from the misdeeds of some 20 men, who used constantly and repeatedly to be making away with their necessaries. No sooner had they come out of prison than they made away with the whole of their kit again, and were sentenced again to stoppages and imprisonment, and so it went on; at ast they were sentenced to corporal punishment, and we selected one of the worst of those cases for infliction, and it was inflicted, not only before the regiment, but before the two regiments then in those barracks. It stopped it like a shot, and had a most extraordinary effect.

942. But that under the present system could not be inflicted, could it?—No.

943. The question I put was rather with reference to a plan which was adopted at one time of dividing the army into two classes, and it was suggested not to allow the flogging of any man who was in the first class until he had been already degraded into the second; was that plan, in your opinion, a good one?—Yes; because it covered repeated acts. It was used as an extraordinary punishment at extraordinary times.

944. Do you think that it would be a popular thing with men in the army to know that, until they had misconducted themselves and had been reduced to the second class, they could not be submitted to the punishment of flogging?—I have seen that have very unfortunate results, in the case for instance of the Fenian trials, where perhaps some of those Fenian emissaries had entered into the army for the purpose of tampering with the soldiers. I was very sorry not to see corporal punishment inflicted upon them, which it could not be as they had conducted themselves thoroughly well before in all other respects. In some cases they only got two years imprisonment, and hardly ever could they inflict corporal punishment upon them. I should be almost inclined to add to the list of crimes punishable by flogging the crime of joining in seditious conspiracies or anything of that nature.

945. (*Lt.-Gen. Peel.*) In reference to a question which was asked by Mr. Russell Gurney, all serjeants and corporals would naturally be in the first class, would they not?—They would.

946. Would not a case of gross insubordination upon their part be a worse crime than on the part of a man who was in the second class?—Undoubtedly.

947. Therefore you think undoubtedly he ought to be subject to corporal punishment?—Certainly; but that would be a very extreme case.

948. (*Chairman.* Supposing that corporal punishwere abolished what punishment would you suggest to supply its place for insubordination?—I can really think of none. I think that there are some cases which it is impossible to deal with now, such as that of a man has been repeatedly tried for insubordination and gross insubordination.

949. (*Lt.-Gen. Eyre.*) Do you not think that the hands of the military authorities must now be greatly strengthened by some new means, and will it not be absolutely necessary to enable the Government to discharge really bad characters, marking them so as to prevent their return to the service?—Certainly; but I dare say that you are aware that it is very easy to obliterate those marks.

950. But might not that be so arranged as to prevent such a man's return to the service?—The present way of marking a man is quite inadequate as a safeguard to prevent a man's returning to the service; because a man by the repeated use of corrosive sublimate can remove all the mark.

951. Surely not so as not to leave some vestige?—I have seen it when it has been three parts gone, and you would not have known it.

952. (*Maj.-Gen. Horsford.*) But surely there has been something there?—There has been something there.

953. (*Chairman.*) But independently of the marking, do you believe that the fear of dismissal from the service and the marking would always be a check on insubordination, and might it not in some instances be an inducement?—I think in very many cases it would be an inducement. I have known people actually commit crimes in prison so as to get sentenced to penal servitude in order to get out of the service.

954. You think it absolutely necessary, if corporal punishment is done away with, that some other punishment than any which now exists must be found out if you wish to check the crime of insubordination in the army?—I think so.

955. Can you suggest any such punishment?—I cannot.

956. You would not, I presume, recommend that recourse should be had to the French practice of shooting?—There were cases in those great Fenian trials when I thought it was a great pity that that was not carried out; in three cases certainly.

957. But as a punishment for common acts of insubordination you cannot suggest any other punishment which you consider would be equally efficacious?—I cannot suggest any other punishment which would be at all adequate.

958. What would you suggest as the best substitute in your opinion?—I should be inclined to take a great deal more of the fatigue duties off the good soldier, and place them upon the men condemned to imprisonment in the military prisons and in the cells; and that, instead of wearing their uniforms as they do at present in the cells, they should wear a convict's dress, and that the most insubordinate should work in chains.

959. What do you consider to be the severest punishment now, excepting always corporal punishment?—I should say solitary confinement.

960. That is worse than the shot drill you think?—Much worse.

961. You do not think that shot drill applied for a lengthened period would be considered equally severe?—No; and I do not like the solitary confinement.

962. Can you always inflict the punishment of solitary confinement?—No; in many cases the doctors will not recommend it.

963. Could you, as regards the quarters of the different regiments, always sentence a man to solitary confinement?—If they put in the words "separate or solitary."

964. Have you had any experience of soldiers being confined in our civil gaols who were sentenced to solitary confinement?—We have no civil gaols in Ireland to which we commit soldiers on military sentences of imprisonment, except those who have been sentenced to be discharged from the army, in which case we have nothing more to do with them.

965. But in England, have you had any such experience?—In England I have had no experience.

966. But you would find great difficulty in carrying out solitary confinement as a substitute for corporal punishment?—Yes; very often we have great difficulty in carrying it out even now in the military prisons. They were obliged in 1861 at the Horse Guards to modify the mode of carrying it out. Previously to that date the courts-martial used to sentence to specified periods of solitary confinement, specifying at what portion of the imprisonment they were to be carried out; and I think that in July 1861 the Horse Guards found that in many cases it was impracticable, and that the governors of gaols could not carry out the sentence in that way, and they were obliged to leave it to the discretion of the governors of the gaols, the court-martial merely mentioning the amount of solitary confinement to be inflicted, and the amount of hard labour confinement

which should intervene between the portions of solitary confinement.

967. (*Marquis of Hartington.*) Do I rightly understand you to say that you think that the crime of insubordination would not be adequately checked, even by the sentence of penal servitude?—It might with young offenders, but not with hardened offenders.

968. Is it because you think that the desire upon the part of some soldiers is so strong to leave the army that they prefer penal servitude, with the prospect of leaving the army at the end of it, to remaining in the army?—I have known many such cases.

969. Is it not the case that the punishment of penal servitude is found tolerably adequate to check the most hardened offenders in civil life from the commission of crime?—I should hardly think so. I have seen many cases where there have been previous convictions and sentences of penal servitude against a person in civil life, and yet it does not seem to have deterred him from committing exactly the same crime, or even worse.

970. (*Mr. Russell Gurney.*) Is it desirable to keep such a man in the army?—Certainly not.

971. (*Lt.-Gen. Eyre.*) Would not getting rid of such men eventually work a great cure, so that the service would be so improved that it would hold out inducements to the better classes to enter it, which would of course reduce the necessity for punishment, if not wholly yet in a great degree, and instead of having a large number of men seeking their discharge, and committing crimes to gain it, would not the discharge from the army be a punishment?—I am afraid that such a course would be such a drain upon the service that until you had the good men into the service you would have your ranks very thin.

972. (*Mr. Headlam.*) Do you think that it would be a good thing if there was any investigation into the character of a man before he was enlisted into the army?—It would be a good thing if it were practicable; but I apprehend that in the present inefficient state of the police of the country, it would be quite impossible for them to arrive at any real character of a man.

973. Would a man be enlisted if it were known that he was a ticket-of-leave man?—I think not.

974. Would he be refused on that ground?—It is merely a matter of opinion; but I think not.

975. Do you think that he ought to be refused?—It depends very much what he was convicted of, and what his subsequent character had been; but I apprehend that there would be a great distaste on the part of any colonel to enlist a ticket-of-leave man.

976. Practically I think that no investigation whatever into character is made?—No.

977. (*Marquis of Hartington.*) Do you think that the desire of leaving the army at whatever risk, even at the risk of incurring the punishment of penal servitude, would apply to a large proportion of the men in the army now?—No, not to a large proportion.

978. It would only apply to the worst characters, you think?—To about five or six in a regiment; but when you come to apply that to a number of regiments you see how much the service would suffer.

979. Still you do not think that the drain upon the army which you describe of, say, five or six men per regiment, would be compensated by the advantages which General Eyre has mentioned?—It would be so were it not that I am afraid that were such a thing once allowed you would have a great number of other men who, finding that they had made a mistake in entering the army as their profession, and that it was distasteful to them, would commit such crimes as to entail their being discharged.

980. (*Lt.-Gen. Eyre.*) Do you not think that the number of very bad characters is really very limited, although they are so very much heard of from the seriousness of their crimes, and that the class of men who you say often commit crime to get out of the service is very small indeed?—I think they are generally about one quarter per cent., or one man in every 400 in the whole army. I do not mean to say in individual regiments. In some regiments I have seen the numbers as high as 20 or 24.

981. Do you call one in 400 a large number?—No, I do not call that a large number.

982. Could not the service well afford to get rid of such men?—The service would greatly benefit, no doubt.

983. Is not all their duty, or nearly all of it, thrown upon their comrades now?—Yes.

984. What does the high proportion of bad men in some regiments indicate?—An unfortunate system of command.

985. (*Chairman.*) I presume that is not always attributable to the action of the commanding officer, but to the system of the regiment?—Not to the then commanding officer.

986. (*Mr. Russell Gurney.*) Do you mean that the number may vary as much as from two to 20 according to the system of command in the regiment?—Yes.

987. (*Lt.-Gen. Peel.*) If the punishment of flogging should be abolished for mutiny and insubordination there still remains to a general court-martial the power of inflicting the sentence of death, penal servitude for not less than five years, or such other punishment as might by general court-martial be awarded, does there not?—Yes.

988. Do you not suppose that if corporal punishment was abolished, it would be necessary in some serious cases to sentence a prisoner to death?—Undoubtedly it would have a very great effect, but I fear it never would be carried out.

989. But would not a general court-martial, be a very aggravated case of insubordination or mutiny, in necessitated, if they had not the power of sentencing to corporal punishment, to sentence the prisoner to death?—Yes.

990. Which is considered now the severest punishment, 50 lashes or five years' penal servitude?—By the sufferer I should say, that if it was his first time the 50 lashes would be considered the severer punishment, but I do not think there has ever been a case of its being inflicted in peace time without some small amount of imprisonment, at any rate.

991. Then the lowest punishment for insubordination and mutiny that a general court-martial would award would be penal servitude for five years; they could not give a less period?—No; they could give him imprisonment. I have a case in my mind at the present moment of a man going with his loaded musket with intent to shoot the serjeant, and the musket went off; luckily it did not hit the serjeant, and the man was tried upon a charge of insubordination coupled with personal violence, and they did not sentence him to be flogged.

992. (*Mr. Russell Gurney.*) To what did they sentence him?—Two years. There was no struggle, and there was no personal violence used; he did not strike the serjeant.

993. He could not be sentenced to flogging?—No.

994. (*Chairman.*) Have you any suggestions to make with regard to the crime or the punishment for desertion?—I should allow the offence to be tried by regimental court-martial, not taking it away from the district court-martial, but allowing the regimental court-martial to deal with desertion with increased powers.

995. What objection do you offer to the present system, under which that crime must be tried by district court-martial?—It is very often inconvenient when the forces are very much broken up to assemble a district court-martial. The crime of desertion is so easily proved and so well known to everybody, that I think the regimental tribunal is quite fit to try the question.

996. You do not think that there is anything in the crime of desertion which renders it of sufficient

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importance to be exclusively judged of by a district court-martial?—Exactly so.

997. Would you suggest any alteration in the amount of punishment?—I would raise the powers of the regimental court-martial generally to 84 days for certain crimes, among which I should put desertion.

998. With regard to the stoppage of pay, would you make any alteration?—No, I would not make any alteration in that respect.

999. I believe the pay is stopped now?—It is.

1000. And that part of the sentence cannot, under any circumstances, be remitted?—That is the question which was raised the other day by General Rumley, I think. I should consider that the Secretary of State for War can remit the whole or any part. I have known the whole remitted.

1001. Do you think any alteration should be made in that?—I think not.

1002. Do you think that the power should still be retained in the Secretary of State for War to remit any portion of the sentence?—I think so.

1003. And to reinstate a soldier who had deserted as if he had not deserted?—Yes.

1004. (*Lt.-Gen. Peel.*) Is there any difference now in the punishment for desertion in the case of a man who has deserted more than once?—It depends very much upon the court which tries him.

1005. But is there a distinction in the punishment awarded him whether he has deserted once or twice?—I think there would be.

1006. A regimental court-martial could only give the number of days' punishment which you now suggest that they should be able to give?—They should not be able to give more.

1007. But if a man had deserted three or four times, then you would have him tried by district court-martial?—Yes.

1008. (*Mr. Headlam.*) Is there anything at the present moment to prevent a man who has deserted from being tried by regimental court-martial?—Yes.

1009. Where is that prohibited?—Article of War 42, at page 261, is in these words:—"Any officer "who shall desert our service shall suffer death, or "such other punishment as by a general court-"martial shall be awarded. Any non-commissioned "officer or soldier who shall desert our service shall "suffer death or such other punishment as by a "general court-martial shall be awarded; and if "tried by a district or garrison court-martial, shall "suffer such punishment as such court may award." Article 43 specifies what may be tried by a regimental court-martial.

1010. (*Chairman.*) What is the present distinction between absence without leave and desertion?—Beyond 21 days absence, or an absence from quarters with a proved intention to desert.

1011. (*Mr. Russell Gurney.*) If it exceeds 21 days without any proof of intent, does it become desertion?—It is provided for in the 43rd Article of War:—"Any soldier absenting himself without leave "for a period exceeding 21 days shall be tried for "desertion by a general, district, or garrison court-"martial, unless permission is given to try such "soldier for absence without leave by a regimental "court-martial; but any soldier may be tried for "desertion without reference to the time during "which he may have been absent, and may there-"upon be found guilty either of desertion or of "absence without leave."

1012. (*Mr. Mowbray.*) Have you known any case where a soldier tried for absence without leave exceeding 21 days has been tried for a minor offence?—Yes.

1013. (*Chairman.*) But by that Article the commanding officer would have power to try any man who had been absent more than 21 days without leave by regimental court-martial?—They are obliged to apply to the general officer for permission to do so, and it is seldom refused.

1014. The regimental court-martial has now the power to try for absence without leave, has it not?—Yes, for 21 days.

1015. And the distinction whether that is absence without leave or desertion rests with the court?—Yes; in cases only where a man is put on his trial for the graver offence.

1016. (*Lt.-Gen. Scarlett.*) The punishment depends a good deal upon whether a man surrenders himself, or whether he is taken up; and if he surrenders himself he is generally dealt with more leniently, is he not?—Yes; but it is also important as part of the finding.

1017. (*Chairman.*) Have you any suggestion to make with regard to the proceedings of the court in cases of desertion?—I should wish to see evidence taken before the finding as to whether the prisoner surrendered himself or was apprehended, and also as to the dress in which he was at the time of apprehension or surrender.

1018. What is your reason for making that suggestion?—To enable the court to come to a better decision as to whether the man really intended to desert or not.

1019. That evidence being given at present after the finding?—After the finding. Prisoners very often are unable to conduct their own defence, and I think that every assistance should be given to the soldiers.

1020. (*Lt.-Gen. Eyre.*) You are aware that a very large proportion of the soldiers who are in prison are there for desertion; do you think that the punishment now existing for that offence and the nature of the imprisonment are effective in reducing the crime?—I should wish to add a particular punishment to it for desertion.

1021. What punishment would you add?—I should wish to take away a certain portion of the man's pay, which should go to the fund of which the Chairman has spoken for the benefit of the regiment; so that whereas other people are doing his duty a certain portion (say 1*d.* per diem) of his pay should be stopped equal to the time he is in prison for his desertion, and should go to this benefit fund.

1022. (*Chairman.*) When he is in prison what pay does he get?—He gets none; a man in prison forfeits his pay and service for the days he is in prison.

1023. (*Lt.-Gen. Eyre.*) With regard to the punishment of imprisonment for two years, which is very often awarded by courts-martial, do you think that it is too long, or in fact that such a long period is necessary, and that it has a better effect than a shorter term would have with stringent prison discipline?—I think that as long as Generals commanding districts and garrisons have the power of remitting portions of punishments two years would not be too long a sentence, for the effect of reading the sentence out to the men upon parade would be good, and yet you could at any time cut the imprisonment short if you thought that the man was likely to turn out a good soldier.

1024. (*Maj.-Gen. Horsford.*) Do you think that it would be practicable to make the man who had been imprisoned make up the duties which the good soldiers had done for him during the time of his imprisonment?—It would be very desirable, but I could hardly give an opinion as to the practicability of it, because I have never commanded a regiment.

1025. (*Lt.-Gen. Peel.*) With regard to an opinion which you gave that it would be better to ask the question before conviction, whether a man had been guilty of desertion, or of absence without leave, has it a great effect upon the character of a man whether he had been guilty of desertion or not?—I think that it would be a very good thing to take evidence as to previous convictions of absence without leave or desertions.

1026. (*Chairman.*) What is included in the crime of disgraceful conduct?—The crime of disgraceful conduct is described in the Articles of War 79, 80, and 81 in these terms:—"Any officer who shall behave in "a scandalous manner, unbecoming the character of

" an officer and a gentleman." "Any officer, or soldier, " or other person employed in the War Department " or in any way concerned in the care or distribution " of any money, provisions, forage, arms, ammunition, " clothing, or other stores belonging to our army, or " for our use, who shall embezzle, fraudulently mis- " apply, wilfully damage, steal, or receive the same, " knowing them to have been stolen, or shall be con- " cerned therein or connive thereat." " Any soldier " who shall malinger, feign or produce disease or " infirmity, or shall wilfully do any act, or wilfully " disobey any order, whether in hospital or other- " wise, thereby producing or aggravating disease " or infirmity, or delaying his cure, or who shall " wilfully maim or injure himself or any other " soldier, whether at the instance of such other sol- " dier or not, or cause himself to be maimed or " injured by any other person with intent thereby " to render himself or such other soldier unfit for ser- " vice, or who shall tamper with his eyes with intent " thereby to render himself unfit for service, or who " shall steal any money or goods the property of a " comrade, of a military officer, or of any military or " regimental mess or band, or who shall receive any " such money or goods knowing them to have been " stolen ; or who shall steal or embezzle Government " money or property, or shall receive the same know- " ing them to have been stolen or embezzled ; or " who shall committ any other other offence of a " felonious or fraudulent nature, or who shall be " guilty of any other disgraceful conduct of a cruel, " indecent, or unnatural kind."

1027. Have you any suggestions to make with regard, first of all, to the nature of the crime, as to whether anything else should be included in it?—I should be inclined to recommend that repeated acts of making away with necessaries should be included as a charge of disgraceful conduct. It is a distinct robbery from the man's captain and a robbery from his comrades of the benefit of his services.

1028. As regards the punishment of the crime, have you any alteration to recommend?—I should like to see every man convicted of disgraceful conduct employed more frequently on public works in the sight of his comrades in a convict dress.

1029. Would you apply that punishment to all the crimes which are included in disgraceful conduct which you have just now read?—I would.

1030. In every one of them?—Yes; so that if he has done anything in the nature of conduct disgraceful to the character of a soldier he should be seen as a convict.

1031. (*Mr. Russell Gurney.*) You would desire power to be had of inflicting such punishment in every case, but not that it should be necessary to inflict it?—Exactly so.

1032. (*Chairman.*) Do you think that the punishments now awarded are in themselves sufficiently severe to check the crime?—I do not think that there is much disgraceful conduct in the army. There are a few thieves in every regiment.

1033. (*Lt.-Gen. Scarlett.*) But are not all defaulters to be seen working in a prison dress if they come out of prison at all?—Not if they are under sentence of imprisonment which is carried out in the cells.

1034. But if they come out to labour in the public works?—Only out of the military prisons, not out of the cells; but it is very rare, except at Aldershot, that they come out in their prison dress.

1035. (*Marquis of Hartington.*) Would you explain a little more fully your suggestions about making men under punishment work before their comrades in convict dress; what power would you propose to give?—Power to include it as a portion of the sentence that all the men who were committed to prison after a conviction of disgraceful conduct or of gross insubordination should, when they went out to work, wear a special dress. It is written on their commitments what they are convicted of.

1036. But when they are sent to prison they are sent away from their regiment, are they not, generally?—No; in Dublin, for example, we have six regiments in garrison, and the men are generally committed to the military prison at Dublin.

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1037. But in most cases under the present system, having been sent to prison, their comrades see no more of them until they come out as a rule, do they?—No; except at Aldershot, where they are employed a good deal upon public works.

1038. You would extend the Aldershot system, in fact?—I am not sufficiently cognizant of the details of the Aldershot system in other respects, but as regards that particular point I certainly would do so.

1038. (*Mr. Mowbray.*) Have you considered the question of punishments to non-commissioned officers?—Yes.

1040. Have you any suggestions to make of a punishment less than that of reduction to the ranks?—I think that it would be very advisable that in the case of staff serjeants the court-martial should have the power to reduce them to the rank of a platoon serjeant, as there is many a man who is not fit for a staff serjeant who may be very fit as a platoon serjeant, acting under the direction of other serjeants, and also there is many a serjeant who would make a fair corporal, but who is not fit for a serjeant. Although the commanding officer can make a man a man a corporal immediately after his reduction to the ranks, still I think that it is likely to have a bad effect upon the good private soldier to see a man who had been so lately reduced to his own rank promoted again over his head. He may think that there is some favouritism in the matter. It would be better for a court to have the power to reduce a non-commissioned officer as many grades as may be, in the opinion of the court, commensurate with his offence.

1041. You think it an unnecessary degradation first to reduce him to the ranks and afterwards to bring him back to the position of a corporal?—Yes. Take the case of a drill serjeant or a quartermaster-serjeant, who is reduced to the ranks, the next day he may be cleaning the privies with other men, and I think that tends to disgust a man very much with the service. There is no intermediate punishment at present.

1042. (*Mr. Russell Gurney.*) Would he make so good a soldier after having been reduced to the ranks as he would if he had been reduced from a serjeant to a corporal?—I should prefer the plan of leaving the option with the court to reduce a serjeant to a corporal or to the ranks.

1043. (*Lt.-Gen. Peel.*) Would you extend that option to the commanding officer?—Not if you give it to a regimental court-martial. I would sooner have all those things done by regimental courts-martial, to prevent the possibility of a commanding officer doing a thing out of pique or out of obstinacy.

1044. (*Mr. Russell Gurney.*) Has a commanding officer at present the power of reducing to the ranks?—No.

1045. That can only be done by a court-martial, can it?—Only by a court-martial.

1046. (*Maj.-Gen. Horsford.*) The full colonel of the regiment has that power, has he not?—He has.

1047. (*Mr. Russell Gurney.*) Would you not allow the colonel to have the same power of reducing to a corporal instead of reducing to the ranks?—I would give him the power of reducing to a corporal.

1048. (*Lt.-Gen. Peel.*) The full colonel has now the power of reducing a man to the ranks, but he has not the power of reducing from a serjeant to a corporal, and you propose that there should be the power in a regimental court-martial to do that which they have not the power to do; would you extend that power to the full colonel of the regiment as well as to a court-martial?—I would. The power of appealing to the full colonel of a regiment is very seldom used.

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1049. (*Mr. Mowbray.*) Have you any suggestions to offer about the minor punishments of soldiers confined in the guard-rooms?—I have made suggestions upon that head already. As regards men confined for absence without leave, and for a slight taint of drunkenness, that they should be allowed to go to their rooms, having given their names, and that they should be punished the next morning. Guard-rooms are often very much overcrowded on certain occasions, when men are tempted to go out late at night.

1050. (*Marquis of Hartington.*) You said in your last examination with regard to the system of taking down the questions and answers, "It is tedious, "but I think it is due very often to the prisoner, be- "cause there are some people appointed prosecutors "who have no knowledge of framing a question, "legally and properly, and very often they are apt "to put questions which are so improperly framed as "to prejudice very much the case of the prisoner, "and such as the Deputy Judge Advocate would "never allow to be put upon record, and therefore I "think he should have the duty of seeing whether "they are legal or not, or perhaps if the Judge Ad- "vocate knew the prosecutor with whom he was "dealing he might dispense with that." Have you often known of cases where the prosecutor has been incompetent?—"Incompetent" is a strong word to use; what I mean is that they are sometimes not familiar with legal phraseology.

1051. But does not your answer imply a little more than ignorance of legal phraseology; does it not rather imply an ignorance of the principles of law?—I still hold to that answer thoroughly.

1052. Have you any suggestion to make as to any different system of appointing prosecutors?—I think that it might be well when the application for a district court-martial or for a general court-martial goes into the staff, that the commanding officer should add thereto a list of the officers whom he would recommend being appointed as prosecutor on the trial. At present it is generally taken for granted that the Adjutant is prosecutor.

1053. Would you recommend that there should be any office like that of a staff prosecutor, one prosecutor for a district, for instance?—It would be advisable, but I am afraid the country would not stand the expence for the very small amount of duty which he would have to perform.

1054. How many Deputy Judge Advocates are there?—Three; one for the north of England, one for the London district, and one for the whole of Ireland.

1055. Would it in your opinion be desirable that there should be an equal number of staff prosecutors?—It would be desirable, but I do not think that there would be sufficient work for them.

1056. But would there not be as much work for the prosecutors as there is for the Deputy Judge Advocates?—No; because the Deputy Judge Advocate has at present the collection of all the different courts-martial before they come to the Judge Advocate-General's office in London. He collects them and revises them all.

1057. Then you think that in ordinary cases an official like a staff prosecutor is not required?—No; I do not think that they would find work enough for him.

1058. (*Lt.-Gen. Scarlett.*) At a regimental court-martial is there any prosecutor at all?—No, not on ordinary occasions.

1059. (*Chairman.*) Would you recommend that there should be a prosecutor in every regimental court-martial?—I think it advisable that on every court-martial there should be a prosecutor.

1060. (*Marquis of Hartington.*) What is the present system of promulgation of the finding and of the sentence of courts-martial?—It is different in the different grades of courts-martial. In regimental courts-martial it goes direct to the lieutenant-colonel, or officer in command of the regiment for the time being, who confirms the proceedings. With regard to the district court-martial it goes for the perusal of the major-general or other officer commanding the district or garrison, in fact, to whoever convenes it, and he confirms the proceedings or orders the revision of the court, as the case may be.

1061. But in no case is the finding or sentence promulgated, or even known, until it is confirmed by the confirming officer?—Not until it is confirmed.

1062. Would you see any objection to the finding and sentence being made known at once, of course not to be carried into effect until confirmed?—Yes, I see great objections to altering the present system.

1063. Of what kind?—Supposing the case were one of conviction, and a certain sentence of imprisonment, and it went back for revision, and on revision the court were induced to change their finding, I do not think it would have a good effect; and especially in the opposite case, where an acquittal had been obtained, and afterwards on revision a conviction was obtained and the man sentenced to imprisonment. If the first finding were promulgated the man would think that he was quit of it, whereas he would not be really quit of it at all. It would be giving him a false hope.

1064. But do you not think that the present system interferes with the independence of the court?—I think that if they were allowed to talk about it they would be much more likely to be influenced by people who had not been present upon the proceedings, and who were not perfectly conversant with what had been stated on oath.

1065. But it would be only known and talked about after the court had come to its finding?—Yes, but it might not be its final finding.

1066. But have you known such cases as that which you instanced just now, where a court have acquitted a prisoner, and on revision had found him guilty?—Frequently.

1067. Do you think that that is quite just?—Certainly, I think so.

1068. When a finding of acquittal comes back from a confirming officer for revision, is it not almost an instruction—I will not say an order—from that superior officer that the finding should be reversed?—I do not think that it has much weight with the court. The courts are very independent.

1069. But do you not think that it tends to impair their independence?—I think not. It generally puts their back up.

1070. (*Mr. Mowbray.*) As a matter of fact, generally speaking, courts "respectfully adhere to their "finding," do they not?—They do. I will not say that it frequently occurs, but I have known it certainly fifteen or sixteen times in my experience in Ireland that courts on revision have given a finding of "guilty" where they have formerly had a finding of acquittal.

1071. (*Mr. Russell Gurney.*) Does it somehow or other generally become known that there has been a finding of acquittal first?—It is generally known in this way, that there is no evidence taken as to character or former convictions, and therefore everybody knows when there is an acquittal, because the proceedings stop with the finding. When a finding is sent back the proceedings are generally sent back with a letter pointing out certain portions of the evidence to the court, and requesting them to reconsider their former finding.

1072. (*Marquis of Hartington.*) Do you think that any practical inconvenience would result if the power of reconsidering the finding was altogether to cease?—I should be sorry to see it taken away.

1073. Do you think that courts-martial are apt to make mistakes even in such a case as the difference between a finding of "guilty" or "not guilty"?—They are indeed.

1074. (*Chairman.*) Have any of those cases of which you have just spoken been of a very serious nature?—Some of them have been so.

1075. (*Lt.-Gen. Eyre.*) Do you undertake to give any opinion at all upon the minor crimes and punish-

ments dealt with by the commanding officers of regiments?—No.

1076. (*Marquis of Hartington.*) Is it not the fact that in civil cases the jury can never be called upon to reconsider its verdict?—It is so; but the difference between the civil and military tribunals is, that the civil tribuuals are always presided over by some person more or less acquainted with the law, who directs the jury and points out the legal value of the evidence; whereas the military tribunal is occasionally presided over by a person who has no knowledge of law, and is unable to point out those differences in the value of the evidence.

1077. Is not what you said just now an argument against the efficiency of courts-martial as just tribunals altogether?—I think that you must try military offenders by military courts for military offences. You could never get civilians sufficiently cognizant of the practice and custom of the service and of the ways and habits of the soldiers to enable them to take the place of the military tribunals, even though they may be a little less efficient than those presided over by civil officers. I should like even to see a military officer of high rank and long experience in command of a regiment attached to the Judge Advocate General's office to assist him and advise him.

1078. (*Lt.-Gen. Eyre.*) You have said that it sometimes happens that the general officer or the other confirming officer returns for revision a court-martial which finds prisoner "guilty" when he considers him "not guilty"?—Yes.

1079. On the other hand, do you think that there are many instances of a general returning for revision courts-martial where the court acquitted the prisoner, because he thinks in his mind that they are mistaken, and that the prisoner is guilty?—I think he returns it in every case whenever there is the smallest legal mistake.

1080. My object is to ascertain whether the courts-martial lean in a general way rather to the acquittal of the prisoner, if possible, than to finding him "guilty"?—It is difficult to say. I am afraid that the court is rather apt to assume that a man is "guilty," because a case is very seldom sent to trial except they are pretty certain of a conviction.

1081. Is it, or is it not your impression that courts-martial are influenced in that way, and that where there does appear the slightest opening for finding a man "not guilty" they take that view?—Yes, I think they always lean towards a prisoner if they get a chance.

1082. Are you acquainted at all with the practice of civil courts, either by acting as a magistrate or in any other way?—I cannot speak of my own knowledge as to the practice in civil courts.

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1083. You cannot say, in comparing the two, whether courts-martial are less just towards prisoners than civil courts?—I think that there is no fairer tribunal in the world than a court-martial properly conducted.

1084. (*Lt.-Gen. Peel.*) Are you aware in any instance of the proceedings of a court-martial having been revised since the appointment of Deputy Judge Advocates, and in cases where they have been present?—I cannot recollect any case. I am not aware of any such case having occurred.

1085. Therefore the necessity of sending the proceedings of a court-martial back for revision generally arises from the absence of any person from that court-martial who is acquainted with the legal points, and with the value of the evidence?—Yes.

1086. (*Marquis of Hartington.*) Is not the sentence often sent back for revision as being inadequate?—Not often; and I would very seldom recommend that to be done, because it is a snub to the court, which is unnecessary, for the General can always confirm the proceedings, and then remit a portion, or he can confirm the whole proceedings without remitting on the face of the proceedings, and remit part of the punishment afterwards.

1087. Have you known cases when a sentence has been sent back for revision by the confirming officer on account of its inadequacy?—I have.

1088. In such instances has the sentence been increased in severity?—I can call to mind several cases in which it has.

1089. Do you think that that is a desirable power for the confirming officer to have?—I think that it is a desirable power, but it is very seldom used, because it is undesirable at any time to find fault with a court-martial if you can possibly help it.

1090. (*Lt.-Gen. Peel.*) And it is always in the power of the court to refuse any increase of punishment?—Yes.

1091. (*Marquis of Hartington.*) But the confirming officer is always a superior officer to any member of the court, is he not?—Yes.

1092. And therefore the fact of his sending back a sentence or finding for revision is a kind of instruction on his part as to what he wishes the court to do, is it not?—Some commanding officers may word their letters in that way, or cause their lettters of revision to be worded in that way; but it is very undesirable to allow the letter to have the smallest semblance of an order. It is merely to point out things which do not appear to have struck the court. It requires the greatest possible care in writing the letter, so as not to appear to convey the smallest order or even censure.

The witness withdrew.

Col. Joseph Henry Laye called in and examined.

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1093. (*Chairman.*) What post do you hold at present?—I am Deputy Judge Advocate of the London district.

1094. How long have you held that post?—For three years.

1095. Had you held any similar post before?—I had acted in the capacity of Judge Advocate before, and as president of general courts-martial.

1096. For how long a period?—I have been thirty-four years in the service.

1097. How much of that time has been devoted to duties of that nature?—I cannot say as to any particular periods, because it was at different times that I performed the duty; but I was not specially appointed until within the last three years.

1098. I presume that, in the performance of your duties, you have had rather an extensive experience with regard to courts-martial?—I have.

1099. This Commission has directed its inquiries in the first instance to the composition of courts-martial; have you from your experience any suggestions to make with regard to the composition of the court?—I should be very much inclined to let them remain much as they are. Perhaps the number on a general court-martial might be reduced to nine with advantage.

1100. With regard to district courts-martial, would you suggest any alteration?—I should let the district courts-martial and the regimental courts-martial remain as they are.

1101. One of the previous witnesses has suggested as a defect in the regimental courts-martial that they are composed of inexperienced officers, and that their judgments vary very much. Do you agree in that?—No, I do not. I have found, generally speaking, that the young gentlemen in the army in the course of a very little time become very efficient.

1102. Have you any suggestion to make with regard to the present mode of the prosecution at courts-martial?—Yes; I think that on general courts-martial the prosecutor should generally be the commanding officer of the regiment to which the prisoner belongs.

1103. In your opinion should he appear at each court-martial as prosecutor?—At the general courts-

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martial; but at district or regimental courts-martial the adjutant should act as prosecutor.

1104. And you think that the colonel of a regiment to which the officer belongs should be the prosecutor in all respects?—Yes; I think there should be a general order to the effect that they would be held responsible for getting up the case properly, and that more responsibility should be thrown upon them.

1105. What, according to your experience, is the practice now in appointing the prosecutor?—Generally it is the adjutant. I have seen instances in which an officer has been selected at a moment's notice, who is quite ignorant of the case.

1106. (*Lt.-Gen. Scarlett.*) In a general court-martial?—Yes, in a general court-martial.

1107. Are you speaking of courts-martial on officers or on men?—I am generally speaking of courts-martial on men.

1108. (*Chairman.*) Do you think that that is an objectionable practice?—Very much so.

1109. Is it always in the power of a commanding officer to take upon himself the duty of prosecutor?—I should think that it ought to be.

1110. Are there not some officers who are subject to courts-martial who are not under the command of a colonel of a regiment; for instance, there are officers connected with the War Office who may be tried by court-martial, may they not?—Yes.

1111. Whom would you appoint as the prosecutor in a case of that kind?—I would select an officer from the district staff.

1112. Do you recollect any other officers who are subject to be tried by court-martial who are not under the immediate command of the colonel of a regiment?—Yes, there might be the medical staff and commissariat officers.

1113. Whom would you recommend to prosecute in those cases?—The General would naturally select one of the officers of the district staff, either the assistant adjutant-general or the brigade major.

1114. The appointment of prosecutor in every case then, excepting that of an officer belonging to a regiment, you would leave to the discretion of the General of the district?—I would.

1115. Is that so now?—I think it is, so far as my experience goes. The general officer would select the prosecutor if the prisoner was not connected with any regiment.

1116. Do you suggest any alteration at all as to the appointment of a prosecutor?—With regard to a regiment I should.

1117. How long has the present practice of appointing a prosecutor existed?—As long as I can remember in the service.

1118. But at the same time the duties and relative positions of prosecutor and of Deputy Judge Advocate have been altered very much lately, have they not?—They have.

1119. Is not greater duty thrown upon the prosecutor by the fact that for some years past there has been an alteration in the system as regards the appointment of Deputy Judge Advocate?—Yes. Formerly the Deputy Judge Advocate was prosecutor, but now it is not so.

1120. (*Mr. Mowbray.*) At the time when the Deputy Judge Advocate acted as prosecutor he brought a certain amount of legal knowledge to bear on getting up the case for the prosecution, did he not?—Yes.

1121. Was not that an objectionable practice?—Yes, it bore hardly against the prisoner.

1122. But the prosecutor being no longer Judge Advocate, do you think he is apt to get up his case so well?—No.

1123. And in fact the system prevailing for the last few years has led to the cases not being got up with such care and accuracy as formerly?—I should not like to see the Deputy Judge Advocate return to the duties of prosecutor; I think that the case would be met if a general order was issued, that whoever acted as prosecutor should be responsible for being thoroughly up in his case.

1124. (*Chairman.*) Have you any suggestion to make with regard to the summoning of witnesses?—Yes, by the Articles of War in general courts-martial the Judge Advocate has to summon them, and I think that that is very objectionable.

1125. Why do you think it objectionable?—Because he may not be on the spot. For instance, I might be at Pembroke, and a general court-martial might be ordered at Aldershot, and civil witnesses be required; there might be delay if I did not know their names and addresses. I should suggest that military witnesses should be summoned by the commanding officer of the regiment to which the prisoner belongs. If it was necessary to summon any general officer or any officer of rank, or any civilian, it might be done through the general of the district. For instance, supposing that the colonel of a regiment wished for the attendance of a general officer, it would not do for him to send a summons, say, to Sir James Scarlett.

1126. Do you know the cause of the present regulation with regard to the summoning of witnesses?—I suppose it originated when the Judge Advocate was always the prosecutor.

1127. Have you any suggestions to make with regard to the defence of the prisoner?—I think that in a general court-martial the man should always be attended by an officer of his own regiment to watch the case for him, and if necessary to suggest to him questions in the cross-examination of witnesses, and also to assist him in preparing his defence.

1128. You do not think that it would be advisable to allow every prisoner to have legal advice?—A prisoner is allowed to have legal advice, if he chooses to obtain it.

1129. Do you see any objection, when a prisoner has legal advice, to his legal adviser having the power of addressing the court?—I do.

1130. What, in your opinion, is the objection?—I think that it would be regarded as very objectionable by military men. As it is now, the legal adviser has the power of assisting the prisoner in every way by advising him silently, and by suggesting questions to him.

1131. In carrying out the suggestion which you have just now made, that an officer of the prisoner's regiment should be present on all occasions to assist him in his defence, do you see any objection to that officer addressing the court on his behalf?—I should not allow anybody to address the court. I would allow any officer to read the prisoner's defence if he had one written out.

1132. But at the present moment the prosecutor is allowed to address the court, is he not?—Yes.

1133. Would it not be fairer towards the prisoner to give him the same advantage for his defence which the prosecution has?—I think that the prisoner might have an address written for him by his legal assistant, which he would be able to read out himself as his address, or have it read by an officer or soldier friend.

1134. But is there not some advantage to be derived from the address being made by a person competent by education and talent to give it more weight than can generally be given to it by the prisoner?—No doubt it would have more weight.

1135. But is not that the weight which is enjoyed by the prosecution?—It is; but the prosecutor's legal assistant would not be allowed to address the court, and the prosecutor would most probably be a military man.

1136. (*Mr. Mowbray.*) But the prosecutor is a man of education, whereas the prisoner, in most cases, supposing him to be a private, is an illiterate man?—Yes.

1137. (*Chairman.*) Are you still of opinion that it is not advisable that anybody but the prisoner should address the court for the defence?—I think not; I think that if an address was written for the prisoner

by his legal adviser, the prisoner would then read it himself.

1138. (*Mr. Mowbray.*) Do you not think that it would be well that it might be read for him by an officer of the regiment?—I should have no objection to that.

1139. (*Chairman.*) It is a common practice I believe at the present moment for the prisoner to have his defence drawn up, either by a legal or lay adviser, according to his judgment, for his defence?—Yes.

1140. Would you object to the additional privilege on the part of the prisoner of having that defence read by an officer of his own regiment?—Not at all.

1141. From your experience have you found that courts-martial are guided strictly and entirely by the Mutiny Act and the Articles of War?—I should say that they are generally.

1142. Do the Queen's Regulations never enter into the consideration of the court?—Occasionally; but the chief authority is the Articles of War.

1143. You think that at the present moment the court never take into consideration the Queen's Regulations?—I think not as regards awarding punishment; that is provided for by the Articles of War.

1144. In the conduct of a prosecution are the Queen's Regulations ever brought under consideration?—Occasionally.

1145. Are courts-martial guided solely by the Mutiny Act and the Articles of War?—They ought to be so.

1146. In your experience do you know of any instances where they are not so guided?—I do not, except in those former cases with regard to corporal punishment, where according to the Articles of War you might award corporal punishment for a certain offence, but according to the Queen's Regulations you could not do it, unless the man was in the second class.

1147. That is a regulation entirely in favour of the prisoner, is it not?—It is so, certainly.

1148. Have you any suggestions to make with regard to the position of the Deputy Judge Advocate on a court-martial?—I think that he ought not to be under the rank of a substantive or regimental lieutenant-colonel.

1149. Why do you entertain that opinion?—Because I think that he generally ought not to hold any less rank than the president. In all general courts-martial the president is at least a regimental field officer, and by the regulations he ought to be a full colonel; it does not very often happen, but the president if of slightly superior rank might have a disinclination to be guided by the Judge Advocate. On trials where the president is a general officer, I should not anticipate any such difficulty.

1150. Are the Deputy Judge Advocates generally men of considerable experience?—I presume that they have been so, or else they would not have been appointed.

1151. An officer may be appointed temporarily as Deputy Judge Advocate, may he not?—They have been so appointed; but I do not think they would be now, because we receive deputations from the Judge Advocate-General for certain districts.

1152. Up to the present time the office of Deputy Judge Advocate has not been necessarily an office by itself, has it?—Not until within the last three years.

1153. Previously to that period might any officer be appointed Deputy Judge Advocate?—He was selected by the general, or the officer commanding the station, and his name would be submitted to the Judge Advocate-General, who then would give him a deputation. Therefore the appointment rested with the officer commanding the station.

1154. Is there any law which forbids the appointment of Deputy Judge Advocates as formerly being carried on now?—I do not think there is any such law.

1155. Do you think it advisable that any alteration should be made in the present practice of the appointment of Deputy Judge Advocates?—No, I do not see that it is.

1156. The present practice being that there are two district Deputy Judge Advocates in England and one in Ireland?—Yes.

1157. But you would reserve the old power to the Judge Advocate-General to appoint any other person if there should be any necessity for it?—Certainly.

1158. The only suggestion then that you make is that the Deputy Judge Advocate should be of the rank of lieutenant-colonel?—Yes, so as to be in an equal position with the president.

1159. From your experience of the officers who compose courts-martial in general, are they in your opinion sufficiently acquainted with their duties?—Generally speaking, I should say they are.

1160. Do you think that any alteration should be made in the present regulations with regard to the examination of officers before they are admitted to sit on courts-martial?—I am of opinion that every officer before he is allowed to sit on a court-martial should be examined on the Articles of War and the Mutiny Act, and the powers and practices of courts-martial, by a Board of Field Officers.

1161. The present regulation I believe is, that no officer can sit on a court-martial unless he has had an experience of six months in all the courts-martial of the district in which he is quartered?—Yes, I apprehend that alludes to the sitting of supernumeraries on regimental courts-martial.

1162. Would that be sufficient?—I think so quite, but I recommend that he should be examined by a Board of Field Officers, but some officers might be ready in three months.

1163. (*Mr. Russell Gurney.*) Do you think that it would be desirable that that should form any part of the examination of an officer before he has his commission?—No, I should think not. It is too far in advance.

1164. (*Lt.-Gen. Scarlett.*) Do they not undergo an examination upon promotion from ensign to lieutenant and from lieutenant to captain?—They do.

1165. And are not the Articles of War and the Mutiny Act made a subject for that examination?—Yes.

1166. (*Chairman.*) You are of opinion that no alteration is required as to qualifications except that the officers should be examined by a Board of Field Officers?—Especially on this particular branch, the Articles of War and the Mutiny Act.

1167. According to present regulations they are examined, if at all, by the colonel of the regiment, are they not?—Yes, or perhaps by a Board of Field Officers, a major and two captains for promotion, and the Articles of War and the Mutiny Act form a portion of that examination, but perhaps not so much as is desirable.

1168. (*Lt.-Gen. Scarlett.*) You would make it a more formal examination?—Yes, a stiffer examination.

1169. (*Chairman.*) With regard to the composition of district or garrison courts-martial, have you any alterations to suggest?—I think the garrison or district courts-martial should always be composed of officers of different regiments. It may occur, and it has occurred frequently, that a garrison or district court-martial has been composed entirely of officers of the same regiment, and I think that is very objectionable, unless it is abroad, where any other arrangement could not be carried out.

1170. On foreign stations and in our colonies that of course could not be carried out?—No, it could not be carried out.

1171. But wherever it is practicable you recommend that the court-martial should be composed of officers of different regiments?—Yes.

1172. Would you suggest any proportion in which those officers should be selected?—There might be not more than two or three officers out of the regiment. The prisoner would be allowed to object to them if he chose.

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1173. Have you any suggestions to make with regard to the punishments awarded by those courts-martial?—I think that the punishments might be of a lesser degree, and that the imprisonment should not be of so great an extent.

1174–6. But have not the courts-martial the power of awarding shorter or longer punishments?—Yes; but I have frequently seen a man get, in perhaps some simple case, 168 days' imprisonment, and I think that is too much for minor offences.

1177. (*Lt.-Gen. Scarlett.*) Do you find a great difference in the sentences of courts-martial, the crime and the character being pretty nearly the same?—Frequently.

1178. (*Chairman.*) From what do you think that arises?—From the court which is sitting to try the case. There are men who have stricter ideas of discipline than others, and if there happen to be seven men with very strict ideas of discipline they would, perhaps, give a heavier sentence.

1179. Do you think it would be possible to adopt a more regular scale of punishments than is now in force?—I think it would be a very difficult thing, considering the number of offences for which men are tried.

1180. You do not think that it would be possible to prevent that evil that we have just alluded to?—I think that evil is met by having the supervision of the General of the district. If he sees the court giving too severe a sentence he is able to mitigate it, and I have seen it frequently done.

1181. (*Mr. Russell Gurney.*) Do you think that in courts-martial there is a greater variety of punishment than there is by our civil judges for the same same offences?—I do not think there is, but I think we have a greater variety of trivial offences.

1182. (*Lt.-Gen. Scarlett.*) Could you propose any plan by which the punishments could be dealt out more equally by courts-martial?—I do not think I could.

1183. (*Lt.-Gen. Eyre.*) Are the punishments now in force effectual?—I should think they are.

1184. (*Maj.-Gen. Horsford.*) As the whole court act as a jury, do you think that the three seniors might act as judges and might sentence the prisoner, the younger members of the court not being allowed to vote as to the sentence?—I would rather see it stand as it is.

1185. (*Viscount Eversley.*) As Deputy Judge Advocate I believe you do not see the proceedings of district courts-martial until after they have been confirmed by the confirming officer?—No.

1186. Would it not be desirable that you should see them before they are confirmed by the confirming officer?—I think it would.

1187. Do you think that would be an improvement in the system?—I think it would.

1188. (*Chairman.*) With regard to the punishment of non-commissioned officers by courts-martial, have you any alterations to suggest?—Yes; I think that courts-martial ought to have discretionary power to reduce staff serjeants to be company serjeants, and I should also suggest that courts-martial should have discretionary power to reduce a serjeant to a corporal or to the bottom of the list of corporals.

1189. (*Maj.-Gen. Horsford.*) Do you not think that the majority of general officers select a man whether he is at the bottom of the list or at the top, if they want to get a good regimental serjeant-major?—Yes.

1190. The colonel selects a smart man whom he has found who was at the bottom of the list the other day, and immediately makes him serjeant-major in preference to any other?—Yes.

1191. And therefore reduction from the top of the list of serjeants to the bottom would be of no advantoge?—I do not say that you should put him at the bottom of the serjeants, but at the bottom of the corporals.

1192. (*Lt.-Gen. Scarlett.*) You would deprive him of rank?—I would deprive him of rank.

1193. (*Chairman.*) Would you apply that rule to a serjeant-major?—I think it would be sufficient to reduce him from serjeant-major to serjeant.

1194. And you would apply the same rule to them all, of placing them in the next rank below their existing rank?—Yes.

1195. (*Mr. Mowbray.*) But you would do that without necessarily reducing a man to the rank of private?—I would.

1196. (*Chairman.*) Do you think that the punishment of stoppage of pay might be applied to the non-commissioned officers of a regiment?—I do not.

1197. Why do you think that that would not be a punishment suitable to a non-commissioned officer?—Because I think a non-commissioned officer has a certain position to keep up, and he requires all the pay he is possessed of to keep himself in that position.

1198. Have you any other suggestions to make to the Commission with regard to the constitution and the practice of courts-martial or as to the punishments inflicted by those courts?—Not any more than what I have stated.

1199. (*Mr. Mowbray.*) With respect to the preparation of charges, they are prepared at present in the case of general courts-martial at the Judge Advocate-General's office; would you not think it a great advantage if they could be prepared, say, at the Adjutant-General's office?—I think it would; first of all, they are made out at the regiment and then they are submitted through the General of the district for approval to the Judge Advocate-General, who alters them or lets them stand as they are and returns them.

1200. (*Chairman.*) That is in the case of general courts-martial only?—Yes.

1201. (*Mr. Mowbray.*) But they are submitted to the Judge Advocate-General before the prisoner is put upon his trial, are they not?—Yes.

1202. Would it not be better that the Judge Advocate-General should never see them until the case comes finally before him for decision, so that he should approach them with a perfectly impartial mind, and that he should in no sense be committed to the charges?—Yes, I think it would; but in that case he must have some one appointed who is thoroughly up to framing the charges legally.

1203. You think that there should be somebody attached to the Adjutant-General's department in the nature of a clerk of indictments who should prepare the formal charges?—Yes.

1204. With regard to the prosecution, you think that there is greater strength required to get up the prosecution since the Judge Advocate has ceased to take part in its preparation?—Yes, officers I think are very seldom up in performing that duty.

1205. With respect to the practice of writing down the questions and answers, do you think that is a desirable system?—I think so; I should be very sorry to see it done away with, because, unless the questions and answers are written down, I do not see how the Judge Advocate-General or the General of the district could form his opinion of the proceedings.

1206. Do you think it necessary that the questions should be put in writing to the witness, or that the questions might be put orally to the witness, but taken down by a shorthand writer, so that the confirming officer in revising the proceedings might still have a written record?—In very simple trials, such as the case of a man deserting, the questions are not always written down and handed to the president, but they are always written on the face of the proceedings.

1207. With respect to the time occupied, do you think that it would be a great advantage that the court should be enabled to sit after four o'clock?—In some instances it would be an advantage, but I should be sorry to see the proceedings extend over a greater length of time, because I think if officers sit from nine o'clock in the morning to four o'clock their attention would be pretty nearly exhausted. Ten o'clock, however, is a more usual hour for the court to meet.

1208. I belive that in some respects the time which the trials occupy has been shortened by the adoption of printed forms which have been introduced within the last twelvemonths?—Very much so. I may also add that the trials have been very much shortened by the Deputy Judge-Advocates of districts being paid by the year instead of being paid by the day, as formerly was the case. Trials are now got over in a much shorter time.

1209. As to the accuracy with which trials have been conducted since the appointment of Deputy Judge Advocates, three years since, do you know what number of decisions of general courts-martial have been sent back for revision since that change?—Yes, I can state that one only has been sent back.

1210. Was that a case where the court, contrary to the advice of the Judge Advocate, passed a sentence which they were not legally competent to award?—It was in opposition to the advice of the Deputy Judge Advocate.

1211. So that since that appointment of district Deputy Judge Advocate there has not been a single miscarriage of justice?—Not in my district, or that I know of.

1212. Nor so far as you know of through any fault on the part of the Judge Advocate?—Certainly not. I was disarmed in that particular case at the moment, because the instructions which give greater strength to the position of Judge Advocate were then in abeyance pending an alteration which was being made.

1213. You stated that you think it would be advisable that the proceedings of district courts-martial should be submitted to the Deputy Judge Advocate of the district before the confirmation of the confirming officer; do you think that could be done in a reasonable time?—The Judge Advocates would require to have greater assistance; in fact they have no assistance now in their offices, and it would be impossible that the Deputy Judge Advocate of a district could do that unless he had some assistance.

1214. I believe it is done in India?—I cannot speak about India.

1215. You think it would be very desirable that it should be done, and that in order to enable it to be done, so that the sentence might be promulgated, the staff of the Deputy Judge Advocate must be strengthened?—Very much. I think it would entail certain delays, because if the Deputy Judge Advocate is employed on a general court-martial for two or three days his attention might be otherwise engaged than in perusing the proceedings of this particular court-martial.

1216. But you think that any expense attendant on any such proceeding would be more than compensated by the greater accuracy of the proceedings?—I do not know; but it would save the Generals of districts much trouble, because they would have the proceedings come to them complete.

1217. At present if the General commanding a district is in any case in any difficulty he writes a letter to the Judge Advocate-General for his advice before confirmation, does he not?—He does.

1218. But in this case he would always have the advice of the district Deputy Judge Advocate, as a matter of course before proceeding to confirm?—Yes, at first hand.

1219. And then the Judge Advocate-General would remain in the nature of a Court of Appeal?—Yes, the same as he is now.

1220. (*Lt.-Gen. Eyre.*) General courts-martial have very often attracted public notice by the length of time they have taken up; to what is that delay chiefly attributable in your opinion?—The only delays that I have known of late have been those in India or Jamaica; those I cannot speak of. I am not aware of any delay which has taken place in England. The delay which took place in courts-martial before my time as Deputy Judge Advocate was, I presume, in consequence of the number of witnesses that were called.

1221. (*Lt.-Gen. Scarlett.*) Does the mode of taking down the questions and answers lengthen the proceedings?—I cannot say that it does. I should be very sorry to see it done away with.

1222. (*Lt.-Gen. Eyre.*) Are the crimes tried by general court-martial chiefly somewhat exceptional in their nature; and do they therefore require more legal treatment and knowledge than other questions?—Yes.

1223. For example, very frequently paymasters or quartermasters are tried for what are in fact half civil and half military offences, are they not?—Yes, they could only be tried by a general court-martial.

1224. (*Mr. Russell Gurney.*) Are not charges of embezzlement frequently tried by courts-martial?—They are.

1225. Do they take a very long time?—Sometimes they do.

1226. Do you think there would be any objection to such crimes being tried by an ordinary criminal court?—I am not aware that there would be any objection to turning the soldiers over to the civil power.

1227. (*Lt.-Gen. Scarlett.*) Would those trials be more expensive to the country than if they were tried by court-martial?—I should think they would, certainly.

1228. (*Mr. Mowbray.*) Have you generally found that a court-martial is an imperfect tribunal to deal with cases of embezzlement and cases involving matters of account?—I think it is generally.

1229. There is great difficulty generally in giving legal proof of the offence, and as a matter of fact the proof is generally deficient, is that so?—It is not so far deficient that the court do not generally come to a finding.

1230. But it frequently happens, does it not, that that finding is not thoroughly supported by strictly legal evidence?—Yes.

1231. And that not so much from any want of desire to do justice as from the tribunal being imperfectly acquainted with the rules of legal evidence?—Yes.

1232. (*Lt.-Gen. Eyre.*) Although your duty does not extend to regiments, you are well acquainted with the regimental practice, are you not?—I am.

1233. With regard to regimental courts-martial, do you think that it would be possible, for instance, to have one of the captains of a regiment invited to go to the staff college, or wherever else he could get the necessary information, and to make himself acquainted with sufficient military law for the purpose, and for him then to be excused from some of his other duties, so that he might act in regimental courts as assessor, or whatever term may be given to it?—No, I think it is very well met by the adjutant acting as prosecutor, if the commanding officer makes the adjutant do his duty properly, because the cases are generally so very simple which are tried by regimental court-martial.

1234. (*Chairman.*) Do you think that the abolition of corporal punishment would be attended with any inconvenience to the service?—I think it would, most decidedly. It is never inflicted except upon men of very bad character.

1235. For insubordination, for instance, do you think that there is any punishment which could be substituted for it with equal efficacy?—No, corporal punishment can be inflicted there and then, and all the other men see it; but if a man is sentenced to penal servitude or imprisonment for insubordination, the sentence is read out and the man disappears.

1236. Are you at all acquainted with the nature of the punishments in foreign armies?—No, I cannot speak exactly as to them; but I only the other day heard of a punishment existing in the American army, which was that the man was triced up by his wrists to the ceiling, the tips of his toes touching the ground, for a very trivial offence.

1237. (*Mr. Russell Gurney.*) Was that in time of peace?—It was within the last 12 months.

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1238. (*Chairman.*) Are you acquainted with the system of punishment which is in force in the French army?—I am not; but I can state that where we should perhaps flog a man they shoot him.

1239. But you cannot speak as to that from personal knowledge?—No.

1240. (*Mr. Whitbread.*) You cannot say how many men were shot in the last year?—I cannot.

1241. Did you hear Colonel Feilding's evidence just now?—I did.

1242. Do you agree in the main with what he stated with regard to the infliction of corporal punishment?—I do.

1243. (*Mr. Russell Gurney.*) You mentioned just now, did you not, that corporal punishment was never inflicted except on persons of very bad character?—I think never.

1244. Then would you see any objection to its infliction being forbidden in the case of men of one class, that class consisting of persons who had not been reduced for misconduct, because, supposing that there were two classes, there would not be persons of very bad character in the first class?—There might be persons of very bad character in the first class. If a man was quite clear for 12 months he would regain his position as a first-class man, and the next day he might be guilty of a gross act of insubordination.

1245. But is it within your experience that persons of very bad character become subsequently good soldiers?—I do not think that they are made worse by receiving corporal punishment.

1246. It was mentioned by Colonel Feilding that there were cases within his own knowledge of persons who had been flogged and who had been subsequently very good soldiers; is that likely to be the case where those persons who were flogged were persons of very bad character?—Not all of them.

1247. Then is it not very desirable to get rid of such persons from the regiment?—They generally are got rid of. They are tried by general court-martial, and a man of very bad character is sentenced to corporal punishment and discharged the service with ignominy.

1248. (*Mr. Whitbread.*) You say that corporal punishment is confined to persons of very bad character. By the Mutiny Act of last year it appears that it was confined to two crimes, mutiny and insubordination with violence. If a man previously of very good character had been convicted of striking his officer would he be subject to corporal punishment?—He would be subject to it, and probably be sentenced to it; but I think the chances are that he would get penal servitude.

1249. (*Mr. Russell Gurney.*) Would that be considered as being the more severe punishment of the two?—Yes. Where you require corporal punishment is where it must take place at once. It depends upon the character of the man. At a general court-martial not long since a man was tried for insubordination with violence for stabbing a corporal, and he got 12 months' imprisonment, in consequence of mitigating circumstances.

1250. (*Mr. Whitbread.*) Assuming this punishment to be abolished, would it not be necessary to provide some means of getting rid of bad characters more easily than you can do at present?—Any general court-martial can get rid of a bad character if he is tried.

1251. Do you not think that it will be necessary to have resort to getting rid of bad characters more frequently?—I think that commanding officers have resort to a measure of the kind by bringing a man to a general court-martial for that very purpose.

1252. (*Lt.-Gen. Eyre.*) But is it not the great complaint of commanding officers that they cannot get rid of their bad characters without so much difficulty?—I have not heard it, and as Deputy Judge Advocate I have attended several general courts-martial where men have evidently been tried by that tribunal in order to have them discharged.

1253. (*Mr. Whitbread.*) Do men look forward to the punishment of imprisonment with much dread?—I have heard that men do so, not so much the first time; but if they go back to some of the military prisons they do the second time.

1254. You mean that after having had experience of one term of imprisonment they do not like to go back to prison?—They do not like to go back to the prison because their character is known. A man when he is first imprisoned may be, perhaps, put on lighter work, but if he goes back a second time he knows that he will not get those indulgences.

1255. (*Chairman.*) Have you any other general suggestions to make to the Commission?—In regard to habitual drunkenness, I think that as men have increased pay now the power of the regimental and district courts-martial should be greater as to stoppage of pay, and that they should be able to stop twopence instead of a penny. The full extent to which a man may be sentenced now is threepence a day. I would increase that to sixpence by a series of courts-martial. Supposing a man is sentenced to stoppage to the extent of threepence a day by three different courts-martial, that is all they can give; but I say that a court-martial ought to be allowed to place men under stoppages of twopence a day for each conviction, not exceeding in the aggregate sixpence.

1256. Would not that come rather hard on the captains of companies?—I am not exactly aware whether it is stopped at the end of the quarter or at the beginning.

1257. But it would be stopped by the day, would it not?—I do not think that it would be hard for the captains of companies, because they estimate the pay for the month, and as they have nothing to pay the man until he comes out of prison, it would not be out of the captains' pockets.

1258. (*Lt.-Gen. Scarlett*). Do you think that any advantage would be gained by having permanent courts-martial, consisting of the same president and of the same members sitting in different districts, instead of selecting them by roster as at present?—I do not know how you could carry it out, excepting in some very large districts.

1259. In London?—Yes, and in the northern districts, in Manchester, and at Aldershot.

1260. So that you might send a prisoner to London, or to Aldershot, or to Manchester, according to the district?—It would be attended with a great deal of expense.

1261. But do you think that any advantage would be gained as to the quality of punishment?—I think that the punishments would be more equalized.

1262. Those members would be more habituated to sift evidence, and do you not think that they would perhaps come to better conclusions than they do at present as to finding "guilty" or "not guilty," and also as to awarding punishment?—The awarding of punishment might be more equalized, but I do not think that the finding of "guilty" or "not guilty" would be improved. I think that nothing can be fairer than the decisions of courts-martial, and I do not think that it would be a popular thing for the men. I have here a memorandum for the last two years of the courts-martial in the London district. There were 2,281 courts-martial in 1866, of which 900 were for desertion, 221 for insubordination and drunkenness, 306 for drunkenness, and 875 for miscellaneous offences.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Room E., House of Lords.

Thursday, 2nd April 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

VISCOUNT EVERSLEY.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER, C.B.
CAPTAIN THE HON. J. C. W. VIVIAN.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

LIEUT.-GENERAL LORD WILLIAM PAULET, K.C.B., examined.

Lt.-Gen. Lord W. Paulet, K.C.B.
2 April 1868.

1263. (*Chairman.*) It is scarcely necessary to ask your Lordship whether you are Adjutant-General of the Forces?—I am.

1264. How long have you held that office?—For three years on the first of July next.

1265. Has your attention been directed very much during that time to courts-martial?—Yes, though perhaps not really so much as it would be when in the command of a district as I was for some time.

1266. I believe that you had held the command of a district previously?—Yes; I have been for 13 years uninterruptedly in command somewhere.

1267. Will you favour the Commission with your opinion as to the constitution of the several branches of courts-martial, and whether you think that any alteration, first of all, in the constitution of any of those courts is desirable?—I do not think that there is much necessity for that, but if you could simplify the Articles of War a little it would be as well, and if you made them perhaps a little more concise and a little more definite.

1268. In what respect do you think the Articles of War are deficient?—I think that the Articles are unnecessarily long, and there is a great deal of repetition.

1269. Do you think that that leads to confusion in the conduct of the courts?—I think it may do so a little in the case of young officers, though not in the case of old officers. My impression is that a court-martial should be as much a court of honour and a court of equity, or even more so, than simply a legal court; for I think the prisoners always have a fair trial. If there is the slightest chance of a prisoner getting off, he generally is acquitted.

1270. With regard to the constitution of the general courts-martial, I believe an alteration has taken place within the last few years with regard to the duties of the Deputy Judge Advocate-General?—Yes.

1271. Do you think those alterations have been attended with advantage?—I think with very great advantage. The Deputy Judge Advocate-General is a man with practical experience, and who is constantly in the habit of paying attention to courts-martial, and of course he is better able to give advice, which is very often required. Courts-martial now are becoming comparatively legal courts, instead of everything being left to the discretion of the officers, and it is really necessary to have some one to advise sometimes when a nice point arises. The generality of the cases tried by courts-martial are simple and easy enough; but now and then you get a difficult case, such as, for instance, embezzlement, and some of those cases really require legal advice.

1272. Do you approve of the present mode of appointing the prosecutor in a general court-martial?—I do; I think some one is generally appointed who ought to know the case, or who is supposed to understand getting it up. He is generally an officer on the spot, or the colonel of the regiment, if it is a particular case, will sometimes take the duty himself.

1273. But the practice is not uniform, I believe?—It is not. The adjutant prosecutes in all common cases. I have seen a commanding officer himself prosecute, but it is only in particular cases that he does so. That was in a case where a man appealed against his decision. It is very seldom that a commanding officer does it, and I do not think that it is a good thing for a commanding officer to prosecute, because he may be, perhaps, biassed or prejudiced against the prisoner in some degree, and, perhaps, having investigated the case he is more likely to carry out his own views if he can.

1274. It has been stated in evidence before the Commission that the prosecutor has the power of addressing the court in person previously to the commencement of the proceedings?—That is the case.

1275. It has also been stated that no person can address the court on behalf of the prisoner?—That is so.

1276. Do you think that the service requires that that rule should be still adhered to?—I think it should be adhered to. Generally speaking officers are more inclined to lean to a prisoner who has a common plain defence, which he either speaks or hands in written, than they would be if he had a clever lawyer to advocate his cause.

1277. Do you think that now that shorthand writers are admitted to general courts-martial there is any longer any necessity for every question being put through the president and in writing?—I think so. It must assist the Judge Advocate-General when the proceedings go to him, and I think sometimes if the court do not act properly it enables him to correct it or reverse their error.

1278. You think that is a regulation which is in favour of the prisoner?—I think it is in favour of the prisoner, and it is certainly in favour of justice and in favour of courts-martial being rigidly and properly carried out.

1279. A prisoner is allowed to have a friend in court with him to advise him, is he not?—Yes.

1280. And that friend is allowed to draw up his defence for him; but the prisoner, I believe, must read the defence himself?—Yes, or he may hand it into the court to read.

1281. Do you see any objection to the prisoner being allowed to select any officer of his regiment, or any friend in the regiment, to read his defence for him?—I should not see any objection to that.

1282. And who might assert for him all the privileges which are enjoyed by the prosecutor?—I do not think that his friend ought to address the court, or that anybody ought to address the court, for the reasons which I have stated.

1283. You think that the feeling of the court is more towards the prisoner when his friend has not the power of addressing them?—I think so. In the cases of general courts-martial upon officers, upon several of which I have sat, where a lawyer has been employed in the defence I have seen that he has done the prisoner more harm than good; for generally speaking, although he is well up in law, very often he is not very well up in military discipline, and he very often gets the prisoner into trouble. I think I have oftener seen him do harm than good. A man may be a very good lawyer, but not a good military disciplinarian.

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You very seldom hear in the service that a soldier complains of not having had fair treatment from a court-martial.

1284. I understand that the examination of a witness must be on paper?—It must.

1285. With regard to the cross-examination of witnesses, do you think that any greater power might be given than exists at present?—In a general court-martial the president can refer to the Judge Advocate-General if he has the slightest doubt as to whether it is a proper question, and he decides whether it ought to be put or not.

1286. (*Lt.-Gen. Scarlett.*) Do you think that if those questions were put *vivâ voce* instead of being written there would be any evil in it?—I think that it is better to have them written, because they put so many questions that people get confused if many of them are not taken down, and some of them are. I would rather have them written.

1287. (*Mr. Mowbray.*) If a shorthand writer were present they might all be taken down, and still a record would remain for the Judge Advocate-General?—Yes; I think that too many questions are very apt to confuse the court. People put such curious questions sometimes, that by obliging them to write the questions, as is the case now, and submit them for the approval of the Deputy Judge Advocate-General, I think you save a great many unnecessary questions being put.

1288. (*Chairman.*) Is is not rather considered that truth is elicited by a variety of questions?—No doubt. I mean if you do not put too many.

1289. And it would be always in the power of the court to check any irrelevant questions, would it not?—Yes, of course; but still I rather like the plan of writing down the questions.

1290. When the prosecutor cross-examines a witness for the defence, does he also put his questions on paper?—Yes.

1291. (*Lt.-Gen. Scarlett.*) So that every question is submitted to the president, either on the part of the prosecutor or on the part of the prisoner, before it is put?—Yes, before it is given out.

1292. Therefore if there is anything illegal in the question, or if there is anything detrimental to the interests of the prisoner or of the prosecutor, the president would stop it?—Yes.

1293. (*Capt. Vivian.*) But the president decides whether a question which is handed in by the prisoner is for his advantage or for his disadvantage?—If the president has any doubt he would hand it to the Deputy Judge Advocate-General and take his opinion upon it.

1294. Has the Deputy Judge Advocate the power of suppressing a question?—No, he has not; but would advise the suppression of a question if he thought it illegal or objectionable.

1295. (*Lt.-Gen. Scarlett.*) But would he suppress it unless it was either wrong in point of law or perfectly irrelevant?—If he said that it was an improper question I should think that the president would not press it.

1296. (*Chairman.*) But the Deputy Judge Advocate would not exercise any judgment with regard to its being of weight in the defence; it is merely on a point of law that he gives an opinion?—It is merely on a point of law or relevancy.

1297. (*Capt. Vivian.*) At present as the court is constituted the Deputy Judge Advocate has the power of suppressing a question put in by the prisoner in his defence, has he not?—He has not the power.

1298. But has the power?—He has not the power.

1299. (*Mr. Headlam.*) As I understand it, he is the person who is to judge of the legality or illegality of the question, unless the court refers it to a higher tribunal?—Yes.

1300. But the president, supposing that there is any doubt of the legality or propriety of a question, takes the opinion of the Deputy Judge Advocate as to whether it ought or ought not to be put?—Certainly, as to the propriety or necessity of a question sometimes.

1301. (*Lt.-Gen. Scarlett.*) In the event of a question being refused and afterwards pressed by the prosecutor or prisoner, what is the custom of the court?—I think that the custom of the court would be to adjourn and refer it to a higher authority. I should do so as president.

1302. Is the court cleared?—The court is cleared, of course.

1303. And is the question then discussed by the court?—The question would be discussed by the court, and if they thought it necessary they would adjourn the court and refer it to a higher authority.

1304. Then not only the president and the Judge Advocate, but the full court have the power of deciding whether the question should be put or should not be put?—I do not think they would put a question if the Judge Advocate decided that it was illegal, for instance.

1305. But if it was rejected upon any other ground but that of illegality, what would occur?—I think the court would overrule the objection, and say that they thought the question necessary if it was only as to its propriety.

1306. (*Mr. Headlam.*) Are you aware that in some cases in India questions put by the prisoner in cross-examination have been refused by the court upon the ground of their being irrelevant?—I have never sat upon a court-martial in India. They do not come to us; they are approved of in India.

1307. They come to the Judge Advocate-General?—They come to the Judge Advocate-General eventually, but they do not come to me.

1308. Are you aware that there have been some cases in India in which questions put by the prisoner have been refused, and the whole trial has been subsequently upset in consequence of the court refusing to put questions on behalf of the prisoner?—I was not aware of it. The general courts-martial in India go to the Military Secretary. I do not deal with them.

1309. (*Lt.-Gen. Eyre.*) With reference to the Deputy Judge Advocate deciding points, is it not the case, according to the regulations lately made for the guidance of the Judge Advocate and the court-martial, that he is directed to point out to the court anything in favour of the prisoner?—Yes, he ought to be quite as much the adviser of the prisoner in my opinion, or more so, than he would be of the prosecutor. He is supposed to advise the prisoner for his good.

1310. Do not the court when they think a question rather tends to damage the prisoner, although it is put by the prisoner himself, always advise him to withdraw that question?—Yes, and the Judge Advocate would advise him in his defence.

1311. (*Chairman.*) Before a trial takes place in a general court-martial the prisoner is entitled to know the nature of the charge and the evidence that is to be brought against him, is he not?—Yes, that is the case in all courts-martial, regimental, district, and general; he is present at the preliminary investigation of his case, therefore is aware of the evidence to be brought against him.

1312. Is it necessary that he should know the nature of the evidence of each witness that is to be brought against him?—I do not think it is. Generally speaking he does know it, but he has no summary of the evidence given him.

1313. What are the documents that are furnished to a prisoner?—He gets a copy of the charge and a list of the evidence against him. His own evidence of course he knows, and that would be naturally put down too, so that he would have the evidence for and against him.

1314. Can any witness be examined whose name has not been delivered to the prisoner previous to the commencement of the proceedings?—Yes; I think that if it was necessary to call in extra evidence you might do so and would do so.

1315. Without notice to the prisoner?—Without notice to the prisoner. If occurrences in the court-martial made the prosecutor think it was necessary to call additional evidence he would do so. The

prisoner still has the power of cross-examining that evidence the same as any other, if he chooses.

1316. He is called upon to cross-examine the evidence immediately on the evidence being given, without a knowledge of the character or the circumstances of the witness, is he not?—Yes.

1317. Have you any suggestions to make to the Commission with regard to the mode of conducting the inquiries in a court-martial, as far as the evidence for the prosecution and the defence are concerned?—I have not.

1318. With regard to the finding, it has been suggested by a previous witness that an alteration might be made in the mode in which the opinions of the officers of the court are taken, and that instead of the opinion of the junior officers being taken first, the opinions should be taken from flank to centre, do you think that would be an advisable alteration?—I think it would. The reason I suppose that the junior officer is made always to give his opinion first is that he should not be biassed by his superiors, but I think it would very likely go against the prisoner, because I think young officers in their ignorance give rather vague opinions, though not so much now as they used to do; I do not think it would make much difference. It would not be a bad plan I think for the members of the court not to give their findings *vivâ voce*, but to write them on bits of paper and hand them up to the president; but I do not think it would make much difference in the case.

1319. Do you see any objection to some of the rules that are applicable to general courts-martial being applied to district courts-martial; for instance, that there should be a Deputy Judge Advocate and a prosecutor in a district court-martial the same as in a general court-martial?—I do not think it is necessary, because they are generally plain cases. It would not be a bad plan if you had the power of doing it, but in most cases the crime is very closely investigated by the commanding officer, and witnesses are examined, and there is so much clear evidence adduced that generally speaking the cases do not require a Deputy Judge Advocate to assist the court.

1320. Who in the district court-martial has the duty of looking to the interests of the prisoner in the same way that the Deputy Judge Advocate does in a general court-martial?—Nobody particularly; officers generally look upon court-martial as a court of honour, and they would look quite as much to the interests of the prisoner I think as they would to discipline.

1321. Then of course you would not recommend it in a regimental court-martial?—No, I think it is quite unnecessary for those courts. If it is a serious crime I think the best way is to try a man by general or district court-martial.

1322. According to the Queen's Regulations we observe that no young officer can sit upon a court-martial until he has attended the courts-martial held within the district in which he is quartered for a period of six months?—Yes, he attends as supernumerary.

1323. From your experience should you say that that is sufficient to enable a young officer to exercise a proper judgment in the court?—I think it is; for his commanding officer is supposed to examine him on the Mutiny Act and the Articles of War; but I think a commanding officer, if he thought six months was not enough (some men's intellects are not so clear as others) would order him to sit longer. If I, as commanding officer of a regiment, thought a young officer was not competent to sit as a member of a court-martial, I should order him to sit longer as a supernumerary.

1324. Is it a general rule in the service that the commanding officer shall pass all young officers through an examination as to their fitness and competency to sit upon courts-martial?—I cannot say that they do so exactly, but they certainly should do so; and any president if he saw a young officer deficient would report him.

1325. Then you would not object to its being made a rule without exception that such an examination should take place?—No, I think it is a very good thing that it should. The Queen's Regulations point it out.

1326. On the average are there a sufficient number of courts-martial in six months in each of the different districts in England, for instance, to enable a young man to become competent to sit upon a court-martial?—I am sorry to say I think there are. If a man reads the Articles of War and the Mutiny Act attentively a very few courts-martial will make him competent to give his opinion as a member. Officers are not so young as they used to be; officers of 18 or 19 ought to be competent judges very soon, I think, of what is right and what is wrong.

1327. (*Lt.-Gen. Scarlett.*) Do they not undergo a more strict examination now before entering the army than they did formerly?—They do.

1328. (*Capt. Vivian.*) There is no examination at present with regard to military law, is there?—There is not; but a man has more knowledge imparted to him than he had before, and therefore I think he picks up these things more quickly, or, at any rate, he ought to do so. An officer joining the army used to know very little sometimes, but that certainly cannot be quite the case now.

1329. (*Mr. Mowbray.*) You have just stated that you think that any young officer reading the Mutiny Act and Articles of War attentively would soon be competent to discharge his duties on a court-martial?—Yes.

1330. But in an earlier part of your evidence you stated, did you not, that you thought it would be desirable to simplify the Articles of War?—The clearer they are made the better, because I think sometimes there is a little doubt about them.

1331. Do you not think that the Articles of War and the Mutiny Act in their present condition without an index are very difficult for young officers to comprehend?—I think they are.

1332. To some extent they may appear to be conflicting, may they not?—They may.

1333. And in addition to the Mutiny Act and the Articles of War military law is to be found in a variety of regulations, such as the Queen's Regulations, and the War Office Regulations, and various warrants connected with pay and promotion, and various Army Service Acts from 1847 to 1867?—Yes.

1334. In point of fact military law is at present very much scattered, is it not?—No doubt.

1335. And it requires a great deal of consolidation and codification?—Yes, I think it does for particular cases.

1336. With respect to the prosecution, you have stated that you think that all serious cases should be tried by general court-martial, what would you consider as serious cases?—I mean by serious cases intricate cases.

1337. Either intricate as to facts or serious as regards the nature of the offences?—I mean intricate as to the facts as well as serious as to offence.

1338. Do you not think that it would be very desirable that in all those cases application should be made to your office before the general court-martial was ordered, and that the charges should be prepared in your office instead of being prepared, as they are at present, in the Judge Advocate-General's office?—The Judge Advocate-General ought to be more competent, I think, than we are, to decide the legality of a charge, because if we do not think a thing is quite right we have to refer to the Judge Advocate-General.

1339. The Judge Advocate-General from his greater legal knowledge you suppose to be more competent to prepare the charge?—The charge is prepared by the commanding officer of the regiment.

1340. It is settled at the Judge Advocate-General's office, is it not?—It is settled at the Judge-Advocate General's office.

1341. Have you never considered the difficulty that arises from the Judge Advocate-General being

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the party to settle the charge, and being therefore responsible for that charge, and being afterwards at the conclusion of the trial placed in the difficulty of having himself to revise the charge which has been prepared in his own office?—There may be something in that.

1342. Must it not prevent his approaching the consideration upon the charge with as impartial a mind as he otherwise would have done?—That may be so in some cases.

1343. Do you not think that if legal assistance were given to the Adjutant-General; for instance, if some legal official in the nature of a clerk of indictments were attached to the Adjutant-General's office for the express purpose of preparing the charges that would be a very desirable thing with reference to all general courts-martial?—I think it would.

1344. And with such legal assistance the Adjutant-General, being a soldier, could discharge his duty and get up the case for the prosecution?—Yes; but I am all for having things very plain; and the only thing is that you introduce a law officer into the Adjutant-General's department, where we do not stick so much to law as to equity and honour.

1345. You say that you are all for having things very plain; but are there not a number of cases, and is not that number increasing more and more every year, which are anything but plain, such as embezzlement cases involving matters of account?—Those sort of cases there are, certainly.

1346. Are they not the most difficult cases that are tried by courts-martial?—They are. I should be almost inclined to hand those cases over to civil law.

1347. You think they might be handed over to the civil tribunals with advantage?—I think so, certainly. I would rather see them so handed over, because I think some of them are almost beyond the competency of officers to decide.

1348. Are you aware that at present those cases occasion the greatest embarrassment to the Judge Advocate-General?—Of course they must.

1349. Because he is constantly in the habit of finding inadequate proof, and he is obliged to recommend that the stoppages in the sentence should be set aside?—I should think that is very naturally the case.

1350. With regard to getting up the case for the prosecution, have you often seen instances of a witness for the prosecution being also employed to act as prosecutor?—I have heard the prosecutor after he has made his address give his evidence. If he gives his evidence at all, he gives it after his address.

1351. Does it not occasionally and not unfrequently occur that a person appears as prosecutor who first opens the case by an address, and then is examined upon oath and cross-examined as a witness, and subsequently at the end of the case has to reply on behalf of the prosecution?—Yes, I have seen that; I thought you meant that his evidence was brought in at the middle of the trial. I have never seen that; but I have seen the prosecutor give evidence immediately after his address, but not very often. It is rather a rare occurrence.

1352. Have you never seen this inconvenient result, that the individual who has appeared both as prosecutor and as witness in his reply at the close of the case, has made statements, not upon oath, which may have been supplementary to his statements upon oath, and which may have thereby tended to confuse the court from their not knowing how to discriminate between his statements given upon oath and his statements given in his address as prosecutor?—I think that if he did so they would of course trust to the statement given upon oath.

1353. Would you not think it desirable that there should be a law prohibiting in any case a witness from appearing as prosecutor?—I think it would be better.

1354. You say that you are not acquainted with Indian courts-martial?—No, I never even see them. I merely see the finding and the sentence of general courts-martial in India.

1355. You do not know a case in India which has afforded a striking illustration of the inconvenience arising from a witness appearing also as prosecutor?—No.

1356. You say that you think that no one ought to address the court for the defence; will you give any reasons why the prisoner should not have the same advantage of having his case put before the court by an educated man reading an address, with the force and effect which may be expected to follow from its delivery by an educated man, when the prosecutor has the advantage of having the case stated by an officer who conducts the prosecution, both in his opening address and in his reply?—You must know that soldiers are not lawyers, and if you allowed every soldier, who is perhaps a man of bad character, to inproduce a lawyer, the sort of lawyer which the soldier would introduce would rather prejudice the court against the prisoner than do him good. I would not so much object to a friend addressing the court, but I am quite against introducing civil law into military law, and against introducing lawyers at courts-martial. I presume that these questions refer to the case of a private soldier under trial.

1357. (*Capt. Vivian.*) But law officers are admitted in general courts-martial, are they not?—I know they are, but I think the less they address the court, or interfere with the court, the better.

1358. But they are admitted to general courts-martial now to assist officers; why should they not be admitted to assist soldiers?—They are admitted to assist soldiers.

1359. Only in general courts-martial?—Yes, a soldier can have a lawyer to advise him if he chooses.

1360. (*Mr. Mowbray.*) With respect to district courts-martial, at present no Deputy Judge Advocate appears at a trial by a district court-martial?—No.

1361. The general officer who has convened the court-martial confirms the proceedings without reference, ordinarily speaking, to the Judge Advocate-General, does he not?—Yes.

1362. Do you not think that it would be very advisable that the proceedings of district courts-martial should be submitted to the Deputy Judge Advocate of the district for his consideration before they are confirmed by the revising officer?—I do not think it necessary in plain cases. If I, as a general officer commanding a district, had a case upon which I thought there was any doubt I should, before I confirmed it and carried out the sentence, refer it to the Judge Advocate-General; but the generality of cases of district courts-martial are very plain, and a general officer with a certain degree of experience is, I think, competent to decide most of them; but certainly a general officer would, I think naturally, if he had the slightest doubt about a case, refer it to the Judge Advocate-General.

1363. You say that the cases are very plain, but is it not often a matter of pure accident whether a case is tried by a general court-martial or by a district court-martial?—I think it is according to the degree of the offence.

1364. Is there any rule which determines it?—Yes, there is a rule by the Articles of War. There are certain crimes which you can try only by general courts-martial, unless you can get competent authority to try them by a lesser tribunal. Often a colonel of a regiment applies for a general court-martial upon a man because he has committed a certain crime, but he writes a letter stating his opinion that a district court-martial would meet the ends of justice.

1365. As a matter of fact, whether a crime be or be not more serious, cases involving great difficulty, both as to law and as to facts, come before district courts-martial?—They do very often; and sometimes as difficult cases come to district courts-martial as to general courts-martial.

1366. Then would it not be advisable that in those difficult cases the general should have the benefit of the advice of the Deputy Judge Advocate before he confirms the proceedings?—I think so; when it is

difficult, certainly; but I think in any case of great difficulty the general would refer the matter to the Judge Advocate-General. Of course it might go to the Deputy Judge-Advocate, but I think in all common cases it would only cause delay, and keep the man longer in the guard room, which is not at all an agreeable place for a soldier to be in when there is no necessity for it.

1367. Are you aware that at present every district court-martial, after it has been confirmed, is in fact read by the Deputy Judge Advocate; and in case of difficulty is brought under the notice of the Judge Advocate-General?—Certainly.

1368. Does it not frequently occur that the Judge Advocate-General is obliged to interfere and set aside the proceedings of the trial after they have been confirmed by the General commanding the district?—There are cases of that kind.

1369. And any injustice of that kind would be obviated, would it not, if the case were brought before the Deputy Judge Advocate, and by him submitted, in case of difficulty, to the Judge Advocate-General before confirmation by the officer commanding the district?—I think so, in certain cases; but some cases are so plain that it would be really only productive of delay, and I think that it rather tends to lower the position of the general officer, and takes away his power, as if he were an incompetent judge. I never had a case of a court-martial being quashed.

1370. Do you think that the powers of the general officer would be affected by the proceedings being submitted to the Deputy Judge Advocate before confirmation?—It has long been in the power of a general officer to approve and confirm the finding and sentence of a court-martial; and he is very wrong, if he sees a doubtful case, if he does not refer it to the proper authority.

1371. Your objection is rather to lengthening the time which it would take before it could be approved and confirmed?—It is.

1372. That objection might be met by Colonel Laye's suggestion, that the staff of Deputy Judge Advocates should be increased, so that there might be an adequate number to discharge those duties within a reasonable time?—Yes, I do not think it is very material.

1373. If there were no objection in point of time it would be a great assistance to the General commanding the district, would it not, to have his attention called to the points of the case by a gentleman supposed to be specially conversant with military law?—Of course; I think there would be no objection to it.

1374. (*Capt. Vivian.*) The confirming officer, that is to say, the general officer of the district with regard to a district court-martial, has very great power, has he not?—Yes.

1375. That is to say, he can confirm a sentence, or he can remit the whole of the punishment?—That is so.

1376. So that, in fact, a court-martial at present is only a court of report, it hears the evidence, finds the prisoner "guilty" or "not guilty," and it passes the sentence; but having passed the sentence the sentence cannot be carried into effect until it is confirmed by the commanding officer?—That is the case.

1377. With regard to general courts-martial, all general courts-martial come to the Horse Guards, do they not?—Yes.

1378. The district courts-martial go to the general officer of the district for confirmation?—Yes, for confirmation.

1379. And regimental courts-martial go to the commanding officer of the regiment to be confirmed?—Yes.

1380. All those courts are, as you have said, composed of officers of experience?—Yes.

1381. And an officer is not put upon a court-martial before it is supposed that he knows sufficient of martial law to settle a question upon its merits?—That is so.

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1382. With regard to naval courts-martial, the practice in the navy is, that directly a prisoner is found "guilty" and the sentence is passed, the sentence is then and there announced, the court having complete power to announce the sentence at once; do you know any grave objection why that practice should not prevail in the army as well as in the navy?—I think it would be better in some cases for the commanding officer to think over the case before he approves and confirms.

1383. For instance, with regard to regimental courts-martial, supposing a commanding officer calls a regimental court-martial for the purpose of trying a non-commissioned officer who has been guilty of some offence, and the court-martial sentences that non-commissioned officer to be reduced, supposing that he is a pay-serjeant, let us say, to be reduced to the rank of a serjeant or a corporal; have they that power?—The colonel of the regiment can reduce him to a private, but cannot reduce him to a corporal.

1384. But whatever the sentence may be, the commanding officer has the power now of calling that court together again, for the purpose of reconsidering their sentence?—Yes.

1385. And he may desire the court to reconsider their sentence for the purpose of passing a more severe sentence?—Yes.

1386. Do you not think that that is a very great power?—Yes; he cannot order them, but he may point out that he thinks the punishment is too lenient for the crime.

1387. So that with regard to a regimental court-martial composed of three officers of a regiment, a captain and two subalterns, probably those three officers having passed a sentence are called together again by the commanding officer and desired to reconsider their sentence?—Yes, he has the power of doing it, certainly.

1388. In the case of a district court-martial the general officer of the district can also re-assemble the court-martial, can he not?—Yes.

1389. Or he can absolutely and entirely remit the sentence of the court-martial, not having heard the evidence, though we will infer, as a matter of course, that he has read it?—Yes.

1390. And the Commander-in-Chief has the power entirely to remit the sentence of a general court-martial?—The Queen has, the Commander-in-Chief has not.

1391. Or, on the other hand, he may not listen to the recommendation of the court to mercy or to leniency; but he may carry the sentence, which was the necessary sentence of the court, into full and entire effect?—He can, of course.

1392. Do you not think that that is a very great power to place in the hands of any one man?—It is; but I think that a commanding officer ought to have power.

1393. I am not talking of the commanding officer of a regiment, but let us take the case of a general officer in a very high position. I do not believe that there is a man in the service who would do it; but supposing there was a man actuated by very angry or violent feelings towards a prisoner, might he not under these powers persecute him very severely?—A commanding officer might do so where a general officer would not, because those officers are not brought much into contact with the soldiers of a regiment.

1394. On the other hand, might he not favour a man very much and let him off altogether if he was a great friend of his?—Yes; but I think we have not any commanding officers like that.

1395. Why should there be that great difference which I have described between military courts-martial and naval courts-martial?—I do not know why there should be; but who approves of the naval court-martial?

1396. The court itself having passed its sentence, the sentence is at once announced, and if the man is acquitted, he is then and there released, or if the man is punished, he then and there knows what his punish-

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ment is?—I should not like to recommend that such powers should be taken out of the commanding officer's hands. I do not think that they are abused.

1397. Under the present system have you ever heard of a case of a regimental court-martial where the sentence is not confirmed, but the man, pending the discussion on this point, and reference probably to a higher authority, is nevertheless kept in confinement for nine or ten days?—Certainly.

1398. Notwithstanding that the man has not been sentenced to any punishment by the court?—The man is always under confinement until the finding of the court is approved and confirmed, in the same way as a non-commissioned officer is under arrest.

1399. There is scarcely any practical limit to the time it may take to confirm a regimental court-martial; a man, notwithstanding he is not sentenced to any punishment by the court, may, under the present system, be imprisoned for nine or ten days, may he not?—It is possible.

1400. Do you know no reason except that you would not like to take the power away from the commanding officer, why military courts-martial should not be the same as naval courts-martial in regard to having the power of announcing their sentence at once?—I should not like to see the present system altered. In my opinion it has worked very well as it is, and I should not like the] power taken out of the commanding officer's hands.

1401. (*Mr. Headlam.*) With respect to general courts-martial, the power of confirming or revising the sentence is not vested in the commanding officer nor in the Horse Guards, but I think in Her Majesty herself?—Yes.

1402. And that power is exercised upon the advice of the Judge Advocate-General for the time being, is it not?—Yes.

1403. Supposing that the court had the power of deciding absolutely, and sentences were announced at once, that power of revising would be taken out of Her Majesty's hands, would it not?—Yes.

1404. And whatever had been the mistakes or hardships upon the prisoner in the conduct of that trial, there would be nobody who would be responsible for revising or cancelling the sentence?—No, except the Judge Advocate-General.

1405. What would be the functions of the Judge Advocate-General, supposing that the court had the power of absolutely deciding?—The general court-martial goes to him.

1406. But supposing that the practice were the same as it is in the navy, viz., that the court had the full power of deciding at once by itself upon the punishment, and of announcing it to the prisoner, and if that sentence were carried immediately into effect, of course under those circumstances there would be no power of revision?—No.

1407. So that the functions of the Judge Advocate-General would be entirely done away with?—Quite so.

1408. In point of fact there is no Judge Advocate-General in a marine court-martial, is there?—I think that there is one in the court. I never heard of a naval court-martial without a Judge Advocate-General. Naval courts-martial are not so frequent as military courts-martial. In the first place, a captain in the navy has the power of giving 48 lashes himself, which is as much as a regimental court-martial can give; and they do not try men in the way that we do, but they summarily punish them. That is why I should not like to see courts-martial altered. Of course I would not object in the case of general courts-martial, but I should not like the power in the case of a common regimental court-martial to be taken out of the commanding officer's hands. I think it would lessen his dignity in a regiment.

1409. Do you think that it would be a desirable thing with regard to military courts-martial that there should be no power to revise the sentence after it has been announced by the court?—I think there ought to be power to revise, even if the court should adhere to their former finding.

1410. With respect to general courts-martial, you do not see any objection to that power of revision being vested in the highest power in the realm, even Her Majesty herself?—No.

1411. Do you not think that it is rather agreeable to the army that it should be so vested in Her Majesty rather than in any inferior authority?—Yes. The only evil that I know in the system is that it creates some delay.

1412. Of course in the interval between the completion of the trial and the announcement of its confirmation the prisoner is kept in confinement, is he not?—He is.

1413. Supposing that a part of his sentence is imprisonment for a certain period, does the period for which he is kept in confinement after his trial count in his sentence?—It is counted from the date when the trial is signed.

1414. So that the prisoner does not suffer an injury from the delay which intervenes between the time of the trial and the confirmation of the sentence?—No, except that he is excessively uncomfortable, and is put in a place where the drunken soldiers are put every night. In my opinion he would be much more comfortable in gaol.

1415. (*Capt. Vivian.*) But supposing he is acquitted, what then?—Then he has suffered too much.

1416. (*Mr. Headlam.*) But there is no other evil to the prisoner than the fact that you think that the gaol would be more comfortable place of the two?—Yes; but I think I might say that in case of the acquittal of a man, he has undergone perhaps two months, or even more, of disagreeable confinement, which is rather unjust.

1417. (*Mr. Mowbray.*) With respect to acquittals, are you not aware that since October 1866 an acquittal has been sent to Her Majesty within 24 hours after it has been received at the Judge Advocate-General's Office?—I was not aware of that, but of course it does not go through me. I thought all general courts-martial were taken together.

1418. And at the same time that a communication is made in writing to Her Majesty, a communication is also made to the Commander-in-Chief, so that in case of acquittal there is no delay?—I have very little to do with general courts-martial; in consequence of those courts-martial going to the Queen, they go to the Military Secretary, on account of the communication with Her Majesty, I only know as having commanded a district that I never saw a man actually acquitted at a general court-martial. Acquittals are rare, I think.

1419. (*Mr. Headlam.*) Can you state what delay takes place after the cases are reported from the Judge Advocate-General's Office to the Commander-in-Chief before the promulgation of the sentence in general courts-martial?—That I cannot tell you; that is in the Military Secretary's Office. They would very soon pass out if they were in my office, because I know the inconvenience and disadvantage of keeping that class of men in the guard room, and I should lose no time in forwarding the promulgation.

1420. Assuming it to be true that there is no delay in the case of an acquittal, the only evil of delay as I understand is that the prisoner is rather more uncomfortable in the mode in which he is confined than he would be if he were confined in a gaol?—I think much more so.

1421. But there is no other evil?—If there is no no delay in the case of an acquittal the man comes out and does not suffer.

1422. But assuming that in cases of acquittal there is no delay, then the evil in the other cases is simply that the prisoner is a little more uncomfortable in the place where he is confined than he would be in gaol?—There are other evils; he communicates bad ideas if he is a bad character (which is most probable) to the other prisoners that come into the guard room; he is associated with the whole regiment one after

another as they relieve guard, and he is very likely to endeavour to breed mischief. If he is a popular man among his comrades, he gives bad advice, which may be taken, and if he is an unpopular one, he does not lead a very pleasant life.

1423. Are the guards necessarily in communication with the prisoner?—They are in the day time. You cannot put a man in solitary confinement unless he has been sentenced by court-martial, and you may not put him into a military prison although you have one close by.

1424. Would it be an improvement if he could be confined in a military prison?—Certainly.

1425. Would there be any difficulty in that?—Not the slightest; he would not be put to hard labour, but he would be well kept, and under safe custody.

1426. (*Lt.-Gen. Scarlett.*) He would not suffer more than a civilian does who is remanded?—Not a bit; he would take his exercise in the yard of the prison, and he might be kept distinct from the other prisoners.

1427. (*Mr. Headlam.*) But if his confinement during that period counts as part of his sentence there would not be any hardship in his being committed to hard labour?—No, provided he is not acquitted.

1428. (*Capt. Vivian.*) But the difference between a civilian who is remanded and a military prisoner who is kept after his trial is over is that in the one case the trial is still proceeding, while in the other case, the soldier's trial is over, and he is subject, by the present system, even if acquitted, to a certain number of days' confinement, whereas the civilian instantly walks out of the dock a free man?—That is so.

1429. (*Chairman.*) Have you any suggestion to make to the Commission with regard to an alteration of military punishment?—I should like to see fines established for drunkenness, instead of always bringing men to court-martial for habitual drunkenness.

1430. But a soldier cannot be tried by court-martial for a single case of drunkenness, can he?—Not for a single case of drunkenness, but for habitual drunkenness.

1431. You think that it would be advantageous to establish a system of fines?—I think so. His Royal Highness ordered a committee to sit at the Horse Guards, composed of General Lindsay, Colonel Egerton, and Colonel Whitmore, to take habitual drunkenness into consideration. The proceedings of that committee were forwarded to the War Office, and the Duke of Cambridge recommended Sir John Pakington to let them come before this Commission. They recommended the imposition of fines instead of trying men for habitual drunkenness, and that might be done by a court if you choose, instead of leaving it to the commanding officer to impose the fine, but I think the moment a man after he has been imprisoned comes out, he generally gets drunk again.

1432. Did the committee to which you have just alluded consider a scale of fines?—Yes; that committee was composed of three good officers; General Lindsay is an officer of experience, and Colonel Egerton and Colonel Whitmore have both commanded regiments.

1433. Has your Lordship taken into your consideration the question whether the application of fines imposed for drunkenness should be as at present, or whether they might be applied to some institution in the regiment; for instance, for the benefit of the soldiers generally?—Whether the War Office would sanction it or not, I do not know; but at present of course the stoppages for habitual drunkenness are credited to the public; it is a War Office question whether the Secretary of State for War would allow that money to be applied for that purpose.

1434. (*Lt.-Gen. Scarlett.*) Do you think it would be useful if they were to allow it?—I think it would be.

1435. (*Chairman.*) Do you think that in a regiment, for instance, it would tend to the diminution of drunkenness if the soldiers themselves knew that the punishment was a fine, and that that fine was to go to something in the benefit of which all the soldiers of the regiment would participate?—I do not think it would stop drunkenness; they would say, "Oh! "here is Jack So-and-so. He is a good fellow. We "are always enjoying ourselves at his expense;" and I think that would rather encourage the drunkenness.

1436. (*Lt.-Gen. Scarlett.*) Do you not think the man who was fined would feel it much more when he saw other people enjoying the results of his bad conduct?—He might.

1437. (*Lt.-Gen. Eyre.*) Are you aware that the power of a naval captain to mulct offenders of their pay for almost all offences is almost unlimited?—I know they do do it, but I do not know the extent of their powers. I think it would be a very good plan to try, but of course it rests with the Secretary of State for War whether he chooses to authorize it, because I expect it would amount to a large sum.

1438. (*Capt. Vivian.*) But a drunkard is generally under stoppages almost as much as he can be, is he not?—There is an increase of pay now, and instead of trying a man by court-martial I should fine him 1*s.* or 1*s.* 6*d.* for the first offence in a lump.

1439. (*Chairman.*) In a regimental court-martial, at the present moment, you cannot fine a man for drunkenness?—You can put a man under stoppages of 1*d.* a day if he is tried for habitual drunkenness.

1440. But for a simple act of drunkenness you cannot fine a man, can you?—No; unless he is drunk on duty or on the line of march, and then you can stop 1*d.* a day for two months.

1441. Do you think it would be advantageous to make the punishment for simple drunkenness in regiments a stoppage of pay?—I think I would fine a man. It is better than putting men into the cells. That does them no good. In the first place if a man is drunk the commanding officer may put him in the cells, and then his pay is stopped and his service is lost for the seven days.

1442. From your experience what should you say is the usual punishment in a regiment for simple drunkenness?—It depends a great deal upon the man. Sometimes a man who is a good soldier and a smart soldier and a credit to his regiment gets drunk, who, when he is not drunk, does his duty well; and then you will have a dirty slovenly fellow who is always bringing discredit on his regiment and skulking from his duty, so that of course you are rather more inclined to deal with him more heavily than you would with the good man. Some of the smartest soldiers are drunkards, and generally speaking if you have anything where danger is concerned, such as a fire, they are generally active and daring. I have always seen that when they have been called out at fires the drunkard is the fellow you will see in the most dangerous part of the flames.

1443. Your Lordship has been in the Crimea; did you think that was the case during the war in the Crimea?—They do not get drunk abroad in the same way that they do at home.

1444. (*Lt.-Gen. Eyre.*) Do you mean that the drunkard is pot valiant?—I do not mean that he is pot valiant, but your bad character comes often well out when there is anything dashing to do. I do not dislike a scamp myself, if you have power to keep him in order. He is generally a smart soldier, but he requires a certain degree of tight handling.

1445. (*Chairman.*) Your Lordship would recommend an increase in the system of fines?—Yes, I would, and I would have less imprisonment.

1446. Where the system of fines applies would you recommend an increase of the amount of the fines?—Yes, so that it does not affect the officer commanding the company. That is what a commanding officer should look to. For instance, a commanding officer has power, if a man is absent for five days, to stop 5*s.* from him; but then sometimes a man is in debt to his captain, and then I should not stop the man's pay, because the captain suffers if the man is heavily

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in debt, and it is really punishing the captain instead of the man.

1447. (*Lt.-Gen. Eyre.*) I presume the fines which you propose, you consider would be the means of limiting a man's power of continuing to be a drunkard, while his duty would not be thrown upon others by his being put in prison?—Yes. I do not think long imprisonments do good. I would rather have short imprisonments, and make them very severe.

1448. (*Lt.-Gen. Scarlett.*) Could you suggest anything to be added to the punishment of imprisonment of shorter duration that would make it more effectual?—No, unless you have your prison discipline stricter.

1449. They have now the punishment of piling shot, and that seems to be the most severe; but is there any mode by which a more severe punishment could be inflicted during a shorter imprisonment than is the case now?—Solitary imprisonment is a greater punishment, but it depends very much on the constitution of a man. Some men cannot stand solitary confinement, while other men will lie and sleep, and do not care a bit about it.

1450. (*Mr. Headlam.*) Would you abolish altogether the crime of habitual drunkenness, and merely punish every man for every occasion that he was drunk, but not have any greater punishment for his being drunk twice within a given time?—You increase the punishment in proportion to the number of offences. I do not think it would signify much if habitual drunkenness were abolished altogether, but you must punish drunkenness.

1451. (*Chairman.*) At the same time a commanding officer cannot award the same punishment that a court-martial can?—No; but then, of course, if a soldier was constantly drunk you should have the power to bring him to a court-martial for an act of drunkenness.

1452. (*Lt.-Gen. Scarlett.*) Would you increase the power of a commanding officer in punishing for drunkenness without a court-martial?—Yes, I would. It would save the courts-martial.

1453. (*Chairman.*) From your experience is drunkenness in the army on the increase or the decrease?—I think it is on the decrease. In the last year or two drunkards have been rather severely dealt with. I had found that habitual drunkenness was so inconsistently dealt with throughout the army that I recommended His Royal Highness to insist that every man should be tried as an habitual drunkard for being four times drunk. Sometimes there would be a regiment in garrison where men were allowed to get drunk a great many times without being tried, while another regiment acted up to the strict letter of the law and tried their men for the fourth offence.

1454. (*Lt.-Gen. Scarlett.*) But that would be only an apparent difference, the real amount of drunkenness would be the same, would it not?—I suppose it would: but I do not think there is so much drunkenness in the army. Some years ago you would have men drunk on parade frequently, and if you had an afternoon parade you would certainly have a man or two drunk. Now you very seldom see a man drunk on duty. There is drunkenness at night sometimes, but I think that may be checked a good deal.

1455. (*Chairman*). Does your Lordship find that the amount of drunkenness varies in different regiments?—I do not know that it varies now so much in regiments as it does in localities. Edinburgh, for instance, is a terribly drunken place.

1456. Can you give any reason why one place should have more drunkenness than another?—I think liquor, spirits for instance, are cheaper in some places than in others.

1457. (*Lt.-Gen. Scarlett.*) Do you think that the pains that have been taken in amusing soldiers, giving them reading rooms and other advantages of that kind, have diminished drunkenness?—I should think it ought to have that effect.

1458. (*Chairman.*) But do you know that from your own experience?—I do not know that from experience. A commanding officer of a regiment, I dare say, would be able to give the Commission that information.

1459. Are you satisfied with the powers of courts-martial now to award punishment in cases of insubordination?—I am not.

1460. What alteration would you suggest?—I would suggest that the court should have power to inflict corporal punishment for insubordination, and that it should not be necessary to be coupled with violence. I have known one or two cases lately of men tried by court-martial for insubordination. I can mention a case at Chatham, where the man was sentenced to be discharged with ignominy and to be marked "B C;" and when his court-martial was read he used abusive language to the commanding officer and the whole of the battalion. He got his sentence, and he then ought to have been drummed out. I have been obliged to recommend to His Royal Highness to do away with the custom of drumming a man out, because it gives him an opportunity of being insubordinate, as far as his tongue went, as he knew they could not tie him up and give him a good flogging, having committed no violence.

1461. Is it your opinion then that it is not expedient to do away with corporal punishment?—I do not think it is. I have a great dislike to corporal punishment, but I think you ought to retain the power, and it never should be adopted but in extreme cases.

1462. (*Capt. Vivian.*) Do you know how many cases there were last year of men being flogged in the army?—I think there were 17 cases in the army and two in the Marines, as well as I can recollect. I could mention two cases that happened to me at Portsmouth, where I ordered a drum-head court-martial and flogged a man upon the spot. One man was an artilleryman; he was tried by court-martial for some serious crime (I forget exactly the crime), and he was sentenced to imprisonment and had to march from Portsmouth to Gosport to the military prison. When the escort went to march him off to the prison he kicked his boots off and said, "he would be damned if he would "march." The commanding officer came to me and asked what he had better do, and I said, "Order a "regimental court-martial to sit in front of the guard "room, and I have no doubt the court will sentence "him to be flogged." It was carried out at once, and he was flogged in half an hour. I saw that man afterwards in the hospital, and asked him how he could be such a fool as to act as he had done, and whether he thought I could possibly give in to him, and he said, "No; I don't know what could make me such a fool; "I am very sorry for it, and I will never do it again." He marched off to prison very well after that when his back was well. Some soldiers are very cunning; they try you on to see what you will do. You must bear in mind that if men are physically fit they are taken into the service without regard to character. A man may be a ticket-of-leave man, although most men I would trust to any extent, of course.

1463. (*Chairman.*) Putting aside corporal punishment, what is the highest amount of punishment, short of death, that you can inflict for insubordination?—Penal servitude.

1464. For how long?—For five years.

1465. Is it your Lordship's opinion that that punishment would not be sufficient to deter insubordination?—I do not think it would, because there are certain men that dislike the service; and I am confident in my own mind that when I commanded at Portsmouth there were crimes of insubordination committed for the purpose of getting penal servitude; but instead of meeting their views in that way I always tried them by district court-martial instead of general court-martial, and where there was any act of violence the court generally used to flog them. I carried out that system, and it soon stopped it, but I am convinced their idea was to get penal servitude and a ticket-of-leave. That ran through the army. I was told so by non-commissioned officers. I have known men commit acts of insubordination and violence without any provocation, and when they did not even know the officers

upon whom they committed them. For instance, I remember a visitor of a military prison, an officer of another regiment, was merely going to ask the men if they had any complaints, upon which the prisoner threw a pot of blacking at his head. He could have had no animosity against him, but he wished to get out of the service.

1466. Is there a power generally in various districts of England to inflict the punishment of solitary confinement upon soldiers?—Not in all districts.

1467. Are there districts where there is almost no power to inflict that punishment?—They could not do so at Aldershot, for there are no cells for that purpose. At Gosport they can inflict it, and I expect there are other districts where they cannot inflict that punishment.

1468. In the event of corporal punishment being entirely done away with in the army, are you of opinion that the crime of insubordination will increase?—There is really very little insubordination in the army in my opinion. It is only when you get an incorrigible fellow, that you have insubordination. In some regiments you never scarcely hear of a case of insubordination.

1469. (*Lt.-Gen. Eyre.*) Do you think that really bad characters in the army are very numerous, or not?—I do not think they are numerous.

1470. Do you not think they are much fewer than is generally supposed?—Certainly.

1471. (*Maj.-Gen. Horsford.*) Do you think that flogging has the effect of checking insubordination?—I think a man will be very careful how he is insubordinate when he knows that he is likely to get it.

1472. Then if that fear if being flogged is taken away, do you think that insubordination might increase?—I do; I think it must have a deterrent effect, more or less.

1473. (*Capt. Vivian.*) Do you think if flogging was done away with it would be a good thing to strengthen the hands of commanding officers as to getting rid of bad characters?—Yes, only it must be very cautiously done. They can get rid of bad characters now.

1474. But they can only get rid of them after they have been tried by court-martial and marked "B C"?—If there is some mark the doctor says that cannot be obliterated the Commander-in-Chief authorizes the man's being dismissed. For instance, if a man has a "D" on him, and turns out afterwards to be a bad character, or his age prevents his being re-enlisted, his discharge is authorized.

1475. But without that, supposing a commanding officer has an insubordinate fellow in the regiment that he can do nothing with, can he now dismiss him unless he is tried by court-martial and marked "B C"?—No, and I would not authorize his discharge unless he was marked in some way, because he would re-enlist in another regiment.

1476. The Marines do not mark their men "B C," do they?—They do not. I have complained to the Admiralty about it.

1477. And it occasionally happens, does it not, that a marine enlists in the army and is found out to be a very bad character?—Yes.

1478. Then his commanding officer cannot dismiss him without his being marked "B C"?—No, he must commit disgraceful conduct to have that done.

1479. I believe in the household troops they can dismiss a man?—They can dismiss him in the household cavalry, but that man can go away and enlist in a dragoon regiment, or any other regiment, if he likes.

1480. Do you not think it would be advisable to strengthen the hands of commanding officers if flogging were done away with as to getting rid of bad characters?—I think it would.

1481. So that the public may have some protection against a man being able to enlist again in another another regiment?—Yes, but it must be done very cautiously, because you are giving to a bad man for nothing what you do not give to a good man without paying 20*l.* I mean to say you must give a man a very good trial before you can get rid of him, because if a man wants to quit the service he will say, "I will go and commit a crime, "and just have a little mark put upon me which "nobody will know anything about when I have "put on my coat and waistcoat, and away I will go."

1482. But then he would be tried by court-martial, would he not?—Yes, but he would not mind that.

1483. (*Mr. Headlam.*) In a considerable number of cases I believe now the district courts-martial recommend that a man should be dismissed with ignominy?—Yes.

1484. Can you tell me in what proportion of the cases where such a recommendation is made the recommendation is carried into effect?—I believe always.

1485. It has been stated to me that in many cases where courts-martial have recommended dismissal with ignominy it is not carried into effect?—I have not known that to be the case.

1486. Do you believe it is always carried into effect?—I believe so.

1487. (*Mr. Mowbray.*) The present practice is to sentence a man to it?—Yes; recommendation was the old practice.

1488. The sentence of the court is absolute, that the man be discharged?—I always understood it so when I was in command. A commanding officer in my opinion has power to remit imprisonment. I do not think a commanding officer can remit a stoppage to make good deficiencies.

1489. (*Chairman.*) Have you any suggestions to make with regard to the crime of disgraceful conduct, or the punishment of it?—I think stealing from a comrade is one of the worst petty kinds of disgraceful conduct we have. When I first joined the army there used to be such a thing as a company court-martial, particularly for that crime, but it is not allowed now. I believe it was forbidden in consequence of the men being more severely treated and handled by a company court-martial than they were by a regimental court-martial of their officers.

1490. How is a company court-martial constituted?—The captain used to order the court-martial to sit, and the colour serjeant used to sit as president, with two serjeants, two corporals, and two privates. I suppose it differed in different regiments; but it used to be so in my regiment. The man was sentenced to run the gauntlet, and the men used to take the slings and lick him as he ran up and down.

1491. But that system was abolished because it was found that the sentences were too severe?—The sentences were too severe; they used to lick the men tremendously.

1492. (*Lt.-Gen. Scarlett.*) Was that a legal court-martial, or was it a custom?—It was a custom. It was approved by the captain. The proceedings were written out just like an ordinary court-martial. It was brought before the captain, who read the court-martial and the finding and confirmed it.

1493. Was that recognized by the higher authorities?—It was winked at, at any rate.

1494. (*Chairman.*) Was it carried out to any great extent?—Not much.

1495. Do you recollect the circumstances under which it was stopped at the time?—I forget exactly the period.

1496. Was it by an order from the higher authorities?—I think it was by an order from the higher authorities.

1497. Was any reason assigned for its being stopped?—I believe it was supposed that it was because the men were more severely punished. If the culprit was unpopular they would punish him most severely.

1498. Your Lordship of course is aware what constitutes disgraceful conduct in the Articles of War?—Yes.

1499. Would you alter in any way those items?—No, I do not think I would. It is a very serious thing for a man to be tried for disgraceful conduct, because it affects him in many ways; not only as regards immo-

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diate punishment, but as regards his service and his pension. He may be tried for a petty theft without its being designated as disgraceful conduct, and it has been recommended that unless it really is a serious matter a man should not be charged with disgraceful conduct, although the crime would come under the definition of disgraceful conduct.

1500. Do you think that the number of items in the Articles of War which subject a soldier to trial for disgraceful conduct tends to diminish the feeling against disgraceful conduct among the soldiers of a regiment?—I think it does.

1501. Does your Lordship think that if disgraceful conduct were made a more serious crime it would tend to the diminution of really disgraceful conduct in the army?—Yes; if a man is tried for disgraceful conduct it is a severe charge.

1502. Some of the witnesses have given it as their opinion that some of the Articles should be taken out of the charge for disgraceful conduct, as being of frequent occurrence and not very serious; is your Lordship of that opinion?—Yes; but there is a letter which enables the commanding officer to take the crime out of the category of disgraceful conduct, and according to which a man is not to be charged with disgraceful conduct unless the thing is to a certain degree serious.

1503. But would it not be better that every soldier should have in his mind what is and what is not disgraceful conduct?—Yes. I think stealing from a comrade, even if it is a small sum, should be charged as disgraceful conduct, because a soldier has no way of locking up his things.

1504. But ought not the distinction to be this, that the disgrace is in stealing from a comrade under any circumstances, and not in the amount stolen?—The amount of course makes it more serious.

1505. But it does not at all make the crime different?—It does not.

1506. Would it not be better that the crime of disgraceful conduct should be so strictly defined that every soldier should know, and should have a natural disinclination to it and horror of it?—Yes. I think a soldier is a queer fellow; he does not study martial law much, and it is left really to the discretion of a commanding officer whether he chooses to charge the man with disgraceful conduct or not, according to the degree of the offence. I do not think it requires any further classification. A commanding officer at the head of a regiment ought to be the proper judge whether a man should be charged with disgraceful conduct or not.

1507. (*Lt.-Gen. Eyre.*) When I had more to do with soldiers than I have at this moment it was the rule, by an order or suggestion from your department, that a man should not be tried for disgraceful conduct for the first offence; but that it was only in the event of his committing a disgraceful act a second time that those words should be used?—Yes; but I apprehend that if a man commits a disgraceful act it does not require a charge of repeated acts.

1508. (*Chairman.*) With regard to desertion, have you any suggestions to make to the Commission?—I do not think that desertions are so frequent as they used to be.

1509. To what do you attribute that?—To the greater difficulty in obtaining employment in civil; the increased comforts in the life of a soldier; and the bounty being small, so that they are not so much inclined to desert with a view to enlisting elsewhere.

1510. But for desertion it is absolutely necessary that they should be tried by court-martial, is it not?—A young fellow sometimes deserts and he will repent it and come back and give himself up, and you are obliged to try him by court-martial; it is not optional.

1511. Would you recommend that in all cases where a deserter gives himself up the commanding officer should have the power of awarding what punishment he thinks fit?—I think so in some cases.

1512. That it should be no longer necessary in case a deserter gives himself up that he should be tried by court-martial?—I think it might be so. There are cases sometimes where a man goes and enlists in another regiment; this man should not escape trial.

1513. Do you think it would tend to bring back a number of deserters if that alteration were made?—I do not know that it would.

1514. Do you think that many deserters would come back if they knew that they were not to be tried by court-martial?—I think a great many men might come back from the States.

1515. But they would be subject to whatever punishment the commanding officer thought fit?—If they thought that they would be pardoned they would come back. I do not think that men would come back from this country, but they would come back from abroad. They dare not come back now for fear of apprehension.

1516. (*Lt.-Gen. Scarlett.*) Those men would not be eligible men to serve again in all probability?—They would not; I have known cases where such men have tried to treat with me; but I have said that I would not treat with deserters. I have said, "Give "yourselves up, and I will talk to you," but they would not do that.

1517. If the punishment was lessened do you think that it would make much difference in desertion?—I do not think so. Sometimes a woman takes a fellow away, sometimes drunkenness takes him away, sometimes selling necessaries takes him away.

1518. (*Mr. Headlam.*) Would it not have a bad effect in a regiment if a man had once deserted, and then having deserted had been pardoned, or had been given some very small punishment?—Of course you would not pardon a man unless for some good reason.

1519. Would it not rather have the effect of diminishing the idea of the importance of desertion as a crime?—I should not like to see it much done away with, except in particular cases.

1520. (*Capt. Vivian.*) Is it not the case that very often a young soldier has got out and is led away by a woman, and gets drunk, and then is afraid to come back, and deserts simply through fear?—Yes, no doubt.

1521. Now by law you must try that man, must you not?—Yes.

1522. And you think that there might be some discretionary power?—I think that there might be some discretionary power. Sometimes the commanding officer would like to let a young man off, particularly if the man came back of his own accord. Of course if he was apprehended I would always try him and mark him.

1523. (*Lt.-Gen. Scarlett.*) You have a licence now as far as 21 days, have you not?—Yes, to try a man for absence without leave.

1524. (*Chairman.*) Would you extend that limit for recruits?—No, I think that is quite enough, because if a man does not come back in 21 days you may depend upon it he is gone.

1525. Do you not think that many might be induced to come back if that limit of 21 days were extended to the power which a commanding officer has of dealing with the case?—I do not think it would affect the case much one way or the other.

1526. (*Lt.-Gen. Eyre.*) Considering that officers are tried invariably for absence without leave, of which there was a rather remarkable case lately in the trial of an officer by general court-martial, might it not be left to the commanding officer's discretion to judge whether a young soldier should be brought to trial for a first act of desertion, at all events, or whether he should deal with him just as he pleased?—Although the commanding officer may charge a man with desertion, the court has the power of finding him "guilty" of the lesser offence of absence without leave, and not of desertion. It is in the discretion of the court to do that if they like. If they think that the man did not intend to desert they would find him sometimes absent without leave. Sometimes you may apprehend a man

24 hours after he is gone when you know he is going to desert. At Chatham some little time ago there was an attempt to bring an officer to trial for desertion, but I said I thought that trial for absence without leave was quite sufficient, because I considered the court would naturally cashier him. Why the court did not cashier him I do not know; I think they ought to have done so.

1527. (*Mr. Mowbray.*) In that case the officer was sentenced to be placed at the bottom of his list, was he not?—Yes.

1528. There is no such punishment applicable to non-commissioned officers, is there?—No; and it is very little use doing it with the officer.

1529. Have you ever considered whether there might not be some change in the punishments applicable to non-commissioned officer, such as reduction of rank?—I think it would be useless, because you are allowed to select your non-commissioned officers according to merit for promotion.

1530. As a matter of fact the rule exists, does it not, that a commissioned officer may be sentenced to degradation in his own rank?—I think that it is a very useless sentence too, because he does just the same duties as if he had not been reduced. Very likely it might affect his promotion in his own regiment; but in our service there are so many changes that a man gets promotion out of his regiment very often.

1531. You would rather do away with that as a punishment to commissioned officers than introduce it as a punishment to non-commissioned officers?—It is no punishment to non-commissioned officers, but it might be a punishment to commissioned officers.

1532. Would it be no punishment if a staff serjeant were reduced to a platoon serjeant, or a platoon serjeant to a corporal?—It would be a punishment to reduce a non-commissioned officer, but a serjeant cannot be reduced to a corporal.

1533. Then such a proceeding is a punishment, is it not?—Yes, it is a punishment.

1534. You object to the punishment being inflicted by court-martial, but you think that it might be retained by the commanding officer?—If a commanding officer can do it, I think it is useless doing it by court-martial. If you bring a non-commissioned officer to a court-martial it requires a more serious punishment. A non-commissioned officer is supposed to be a good man; if you bring that man to a court-martial it prevents him hereafter from getting the gratuity and medal, or the medal and annuity; and it is a very serious thing if he has never been tried by court-martial before. A commanding officer has the power of punishing a non-commissioned officer to a certain degree; he may be a bad colour-serjeant, but he may not be a bad man, and the commanding officer deprives him of his colours and saves the man, it is for the man's advantage; whereas if he brought him to a court-martial his conviction carries a great deal of additional punishment with it. If he has once been convicted by court-martial he cannot have the gratuity and medal when he is discharged, and he cannot have the annuity of 20*l.* a year which is sometimes granted.

1535. Supposing the court by whom a man is convicted thinks that the punishment which might have been awarded by the court-martial is an adequate punishment for the offence proved before them, what reason can you assign for limiting the discretion of the court?—The court have nothing to do with the gratuity and medal; but the rule of the service is, that if a man is tried by court-martial he cannot have them. For instance, I would never bring an old soldier to a court-martial, although he might commit an act which would justify me in so doing. I would rather overlook that, and give him a more trivial punishment, because it tells against him when he gets his discharge.

1536. That may be a reason for not bringing him to court-martial; but is that a reason why a court-martial, if they had the man before them, should not award the minor punishment?—I think that the commanding officer had better do it himself than run the risk of trying the man by court-martial.

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1537. Can you assign any reason why the discretion of the court should be limited?—No, there is no harm in it; but the commanding officer having the power to do it, it almost looks as if he had ill-judged the case. A commanding officer generally knows his non-commissioned officers a great deal better than the members of the court do.

1538. When a commanding officer refers a question to the decision of a court-martial he leaves it to their judgment, does he not?—Yes.

1539. And to their unfettered judgment?—Yes, but he would not do that unless it was a serious case.

1540. If, in the exercise of their unfettered judgment, they think that any particular punishment is adequate to the offence, can you conceive any reason why that judgment should be fettered by the previous contrary opinion formed by the commanding officer?—I think that the commanding officer ought to be the judge. It is like bringing a man to a higher tribunal.

1541. Are you aware, for instance, that in civil life a person can be brought before justices at petty sessions and charged with a particular offence, for which they might have the power to award a month's imprisonment, and that if they remit that question to the quarter sessions, or the assizes, the quarter sessions or the assizes may give the man only a fortnight's imprisonment?—Yes.

1542. Is there any reason why a minor punishment should not be given by the higher court, if that higher court thinks the minor punishment adequate to the offence?—No; but I think it is rather taking it out of the commanding officer's discretion to deal with the case.

1543. But does he not himself take it out of his discretion by referring it to the court-martial?—Generally speaking, if he refers it to a court-martial, he would only do it because he thought it a more serious case than he was competent to deal with.

1544. He does it with the object of giving a higher punishment?—Yes, of course.

1545. And the court-martial having heard the case think it deserves a lesser punishment?—Yes.

1546. Are the courts-martial to be fettered by the previous judgment of the commanding officer, who himself thought it necessary to refer that case to a court-martial?—I would rather let it remain as it is. Generally speaking I would rather see the man acquitted.

1547. (*Capt. Vivian.*) Your answer goes to this: that you wish a commanding officer to have the power to summon a court-martial to try a man, and then to have the still further power of saying to that court-martial: "You shall not give him a small "punishment, but you shall give him a punishment "of a certain extent, and not less"?—I think, generally speaking, a non-commissioned officer who is brought before a court-martial, if convicted, had better be reduced.

1548. But supposing that the court does not think so?—The court may not think so. My idea is, that the commanding officer knows the non-commissioned officers of his regiment, or at least he ought to know them, better than individual members of a court.

1549. (*Mr. Mowbray.*) Is not what you suggest in fact, that the commanding officer should give instructions to the court-martial what sentence they should pass as well as be the revising officer?—I do not think he should. I think the president is the man who ought to advise the court, and not the commanding officer, although the commanding officer does sometimes tell the court that he wants a strong example.

1550. Would not the proper theory be, that the commanding officer, having referred the case to the court-martial, leaves it entirely to their discretion, controlled only by the authority of the confirming officer?—Yes; courts are very queer sometimes. I

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can assure you that I have seen courts act in a very extraordinary way, and almost, I may say, kicking against authority; and I dare say you will not contradict me on that head.

1551. (*Lt.-Gen. Scarlett.*) When a man is reduced by the commanding officer from being a staff serjeant or a colour serjeant, is it generally for some crime which he has committed, or is it for want of talent for that particular position?—Very often for want of talent, and sometimes for carelessness in his duties.

1552. But not for any serious crime?—Not for any serious crime. If a man is a very good non-commissioned officer very likely the commanding officer would give him a chance if he committed a crime.

1553. If a non-commissioned officer was reduced from one rank to another by sentence of court-martial, would he be as efficient as a non-commissioned officer in point of discipline in the lower rank as if he had not been tried? would the men respect him, and obey his orders as well if he had been punished in that way?—I do not think they would. I think that depends upon the sort of man he is, and what he is reduced for.

1554. You would rather have a corporal who had not been reduced than a corporal who had been reduced?—I would.

1555. (*Capt. Vivian.*) But is it not frequently the case that you would take the stripes off a corporal, and then reinstate him immediately?—Yes, very often; but if you gave me the choice I would rather have one who had not been broken. Sometimes men in their younger days get larking, but they may make capital soldiers afterwards. I had a serjeant in my regiment who I am sure had 1,500 lashes, and he was one of the most useful men in the regiment; and when he was discharged, after he had more than served his time, there was hardly an officer in the regiment who did not make him a present.

1556. (*Mr. Mowbray.*) Do you assume that where the commanding officer and the court differ as to the extent of the punishment the commanding officer is always right and the court is always wrong?—I think the commanding officer is generally right.

1557. But occasionally it may be otherwise?—Occasionally it may be otherwise.

1558. (*Chairman.*) Have you any idea what the expense is to which the country is put on account of courts-martial?—Not the slightest.

1559. Have you any suggestions to make with regard to the inquiry which has devolved upon this Commission with respect to courts-martial or military punishments?—I do not think I have anything more to suggest than what I have already said.

1560. (*Mr. Headlam.*) Do you think it would be desirable that any investigation should be made into the character of a man before he was enlisted?—It would be desirable if we could do it.

1561. Would there be any insuperable difficulty; an inquiry is made into the character of a man who enters the police for instance?—Yes, but we recruit all over the country, which the police do not. They always know something about a man before they take him; but the number of men we recruit in the army in a year is of course very much larger. I think it would be very advisable if it could be done, but there would be great difficulty about it. In the first place it is only lately, since this increase of pay, that we have been able to keep the army to its establishment.

1562. (*Chairman.*) Is it not a known fact that some of the best soldiers in the army are men who have got into scrapes as civilians?—Yes, no doubt; and many who are scamps at the beginning of their military service, turn out capital soldiers afterwards. I do not care about a scamp, it is an insubordinate soldier that I do not like; I mean a fellow who is not amenable to discipline.

1563. If you were to investigate the character of every man who offers himself as a recruit, do you not believe that a very large amount of the best soldiers in the army would be lost?—Yes, I do. In fact, it is generally the scamp who comes to the army; it is generally a wildish sort of fellow.

1564. (*Lt.-Gen. Eyre.*) With regard to the minor punishments, would you like to strengthen the hands of the commanding officers still further, and give them more power, subject to such conditions as would have to be given out by your department?—You might perhaps sanction 14 instead of seven days' imprisonment.

1565. You do not think that such an alteration would be beneficial?—You might give them stoppage of pay; but I think it is dangerous to put too much power of stopping pay in the commanding officers' hands, for fear of making the soldiers discontented.

1566. Could you give a commanding officer more power than he has of fining, subject to a power of appeal by the soldier?—A soldier has the power of appealing now as to his pay.

1567. You might continue that appeal, of course with regard to any other power?—I am quite in favour of the commanding officer having all power to fine a man for being drunk. It would save a great many courts-martial for habitual drunkenness.

1568. (*Maj.-Gen. Horsford.*) With a power to appeal on the part of the soldier?—Certainly.

1569. (*Lt.-Gen. Eyre.*) Might it not reduce the number of courts-martial?—Yes. In that committee to which I have referred they recommend that.

1570. (*Maj.-Gen. Horsford.*) Do you know that the captain of a ship can positively give three months' imprisonment?—Yes, and he can give a man 48 lashes; but their powers are lessened a good deal now, I believe. They cannot flog now for 48 hours after the offence. A certain interval must be allowed, I believe, and a certain investigation must take place.

1571. (*Capt. Vivian.*) Are prisoners sentenced by court-martial always sent to military prisons?—When I commanded the South-western District I never committed anybody to a civil gaol.

1572. But is it not necessary sometimes, on account of the military prisons being full, to send prisoners to civil gaols?—I expect at Aldershot they have not always room, but it was not so at Gosport.

1573. If that be so, do you not think it would be advisable in some way to increase the accommodation in military prisons, so that military prisoners may be kept quite distinct from civilians?—Certainly; even at Gosport sometimes I used to bed the men in the day rooms when there were not separate cells enough, rather than commit them to civil gaols.

1574. Do you not think that it would be a good thing in those military prisons to utilize the prisoners' labour in some way, and to adopt a system of useful labour, instead of useless labour?—Certainly.

1575. (*Maj. Gen. Horsford.*) Do they feel the punishment more when they are doing nothing useful?—I think they do. It will not do to make the punishment too pleasant, otherwise the men would not care about doing it.

1576. (*Chairman.*) Should you have any objection to put in the report of that committee of which you have spoken?—I sent it to the War Office, hoping to have got the purport of it entered in the Articles of War for this year; but then Sir John Pakington informed me that a Royal Commission upon courts-martial was just appointed, and that he was afraid it could not be done. I expressed a hope that it would be put before the Commission.

1577. It is not in your power to do so?—No. It is gone to the War Office; but I think Sir John Pakington would have no objection to do it, as he told me himself that he would do so.

The witness withdrew.

COLONEL JOSEPH HENRY LAYE re-called and further examined. *Col. J. H. Laye.*

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1578. (*Chairman.*) Can you state to the Commission the number of general and district courts-martial which were held, in the district of which London is the head-quarters, in the year 1866?—In the year 1866 there were 2,281 district courts-martial; 900 of which were for desertion, 221 for insubordination, 306 for drunkenness, and 854 for miscellaneous offences.

1579. What was the number of general courts-martial?—Of general courts-martial there were eight in that year.

1580. What were the offences tried in the general courts-martial?—They were all for insubordination, and generally for insubordination accompanied with violence.

1581. Was drunkenness included in the insubordination in any of those cases?—Only in one or two instances. There was a question asked about the discharging of those men. There were eight general courts-martial assembled in that year, and seven out of the eight of those men were discharged from the service as bad characters.

1582. What other sentence was attached to the discharge?—Four were awarded corporal punishment, two penal servitude, and two imprisonment.

1583. For how long was the penal servitude?—Terms of five years and seven years.

1584. And for how long was the imprisonment?—Two years.

The witness handed in the following statement.

GENERAL COURTS-MARTIAL IN 1866.

Crime.	Punishment.
1. Violence to superior officer.	Corporal punishment, two years' imprisonment, and forfeiture of all service.
2. Insubordination accompanied with personal violence.	Corporal punishment, two years' imprisonment, and discharge from the service.
3. Striking a medical officer.	Corporal punishment, two years' imprisonment, and discharge from the service.
4. Insubordination and traitorous language.	Two years' imprisonment and discharge from the service.
5. Insubordination -	Two years' imprisonment and discharge from the service.
6. Insubordination, attempting to shoot a serjeant.	Five years' penal servitude and discharge from the service with ignominy.
7. Endangering the lives of soldiers by firing off a loaded musket, and making away with ammunition.	Corporal punishment, two years' imprisonment, and discharge with ignominy.
8. Disobedience and attempting to shoot a serjeant.	Seven years' penal servitude, and discharge from the service.

1585. What was the number of district courts-martial in the year 1867?—There were in the year 1867 2,320 district courts-martial.

1586. How many general courts-martial were there?—Sixteen general courts-martial.

1587. What was the description of crimes in 1867?—I have here a statement which will give that information.

The witness handed in the following statement.

GENERAL COURTS-MARTIAL in 1867.

Crime.	Punishment.
1. Desertion and striking the surgeon.	Ten years' penal servitude, discharge, and "B C."
2. Insubordination and traitorous language.	Two years' hard labour, discharge, and "B C."
3. Striking a corporal -	Two years' imprisonment.
4. Striking his commanding officer.	Acquitted.
5. Insubordination, accompanied with personal violence.	One year's imprisonment.
6. Stabbing a serjeant -	Seven years' penal servitude, discharge, and "B C."
7. Desertion, fraudulent misapplication of post-office orders.	Reduction, one year's imprisonment, stoppages.
8. Striking and stabbing a corporal.	One year's imprisonment.
9. Insubordination, accompanied with personal violence, and damaging one round of ammunition.	Acquitted of the first charge, 56 days' imprisonment and stoppage for one round.
10. Insubordinate language to adjutant.	Two years' imprisonment, discharge, "B C."
11. Writing letter to commanding officer reporting the surgeon.	Acquitted.
12. Insubordination -	Two years' imprisonment, discharge, and "B C."
13. Insubordination -	Two years' imprisonment.
14. Insubordination accompanied with personal violence.	Fifty lashes, two years' imprisonment, and forfeitures.
15. Striking the surgeon	Fifty lashes, two years' imprisonment, and forfeitures.
16. Personal violence to non-commissioned officer.	Fifty lashes, two years' imprisonment, discharge, and "B C."

SUMMARY.

Acquitted - - -	3
Penal servitude - -	2
Corporal punishment -	3
Imprisonment -	8
	16

1588. Can you classify the offences tried by district courts-martial?—800 were for desertion, 204 for insubordination (and 40 of those were accompanied with drunkenness), and there were 326 cases of drunkenness, and 900 were miscellaneous offences. It is supposed that drunkenness is the principal crime in the army, but such is not the inference from this return. With regard to many of those cases of desertion, they were cases of young lads who had only enlisted, perhaps, a day or two and found the work unpleasant, regretted that they had enlisted, and deserted; but there were not so many desertions of older soldiers.

1589. What do you say is the crime which in your district has preponderated?—Desertion.

1590. Under the circumstances which you have just mentioned?—Yes, principally.

1591. In what proportion was the insubordination committed by the men in a state of drunkenness?—Out of the 204, 40 of those men I see I have marked as having been drunk at the time of committing the offence, but that is scarcely a fair criterion, because when men have committed an act of insubordination when drunk the offence of drunkenness is not always charged. Out of those 16 men tried by general courts-martial, eight were discharged the service.

1592. (*Lt.-Gen. Eyre.*) Were they marked as well?—Yes; they never discharge a man by court-martial without marking him.

1593. (*Chairman.*) Have you any suggestions to make to the Commission with regard to the crime of disgraceful conduct?—Yes; I should like to see men who commit small petty offences of theft not charged with disgraceful conduct. Many instances occur where a young lad may be tempted in a moment to steal a penny or twopence, for which a summary punishment would I think be sufficient; but at present

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such an offender is often charged with disgraceful conduct, tried by court-martial, and perhaps sentenced to forfeiture of all advantages and discharged.

1594. Can a petty theft of that kind be dealt with by the commanding officer?—I should have no hesitation in dealing with it myself, if a young lad was brought before me.

1595. In practice is it so?—I should think it might be done, and no doubt it is sometimes done. I do not like to see a young lad tried for disgraceful conduct who has committed an offence of that kind.

1596. But what is the practice?—The practice is generally to try him by court-martial.

1597. (*Lt.-Gen. Scarlett.*) Is there not a letter from the Horse Guards relative to disgraceful conduct, I think it was in the Duke of Wellington's time?—Yes. There was such a letter on the 19th of November 1849, and disgraceful conduct was defined in it. That letter is now, I think, obsolete.

1598. Can you state the substance of that letter?—It defined what offences should come under the head of disgraceful conduct,—repeated acts of theft, and acts of a vicious and unnatural kind.

1599. (*Chairman.*) Was that definition different from what is given in the Articles of War?—The Articles give a wider scope of offences.

1600. (*Lt.-Gen. Scarlett.*) Was the letter for the purpose of discouraging the frequent charges of disgraceful conduct?—I think it was.

1601. (*Chairman.*) What further remarks have you to make on the crime of disgraceful conduct or its punishment?—I should like to see the commanding officer have the option of not charging a man with disgraceful conduct who commits some petty offence.

1602. The commanding officer is obliged now to charge him with disgraceful conduct for petty thefts, is he not?—I think so. Stealing from a comrade comes under the Articles of War as "disgraceful conduct."

1603. Have you any further suggestions to make upon that head?—I have not.

1604. Would you suggest any alteration in the punishment for habitual drunkenness?—I mentioned the last day the Commission sat that I would increase the power of courts-martial to increase the amount to be stopped from the man's pay; now it is 1*d.* a day up to 3*d.* for three distinct convictions, but I suggest that the court should be empowered to put a man under stoppages up to 6*d.* for three convictions. That would not tell upon the captain. It is not like stoppages for necessaries, in that case a man's kit is bought at once out of the quartermaster's store and paid for there and then by the captain of his company; but it is not so with regard to stoppages for habitual drunkenness.

1605. Have you any opinion to give with regard to the application of fines for drunkenness?—I should be sorry to see them applied to any present benefit of any of the soldiers, because I think it would very much reduce the feeling of comradeship which now exists among soldiers; for instance, if 20 men of a regiment had been fined a certain sum, say 10*l.* during the year, and that was to be employed for the benefit of the men, say in the shape of a better dinner at Christmas, it would, I think, create a bad feeling, and at the same time the good men would not like to benefit at the expense of the bad men.

1606. Is it not the case that under the present system you can only stop a soldier's pay when he does not perform his requisite service to his country, and is not that the principle under which the stoppage of pay is inflicted?—No; as to these stoppages I think the object is to reduce the amount of money in the man's pocket, so as to prevent his spending so much in liquor.

1607. But you cannot now stop a man's pay for simple drunkenness?—No, it must be for habitual drunkenness.

1608. In the case of habitual drunkenness then, stoppages of pay are a punishment?—Imprisonment is also generally awarded. The stoppages operate partly as a punishment, and partly as a method of depriving the soldier of means to purchase liquor.

1609. Might it not result in dissatisfaction in the army if you were to stop a soldier's pay for a fortnight, say for being drunk once?—I think it would tend to diminish drunkenness.

1610. But might not the soldier then say that he had rendered a service to his country, for which he had not been paid?—He might.

1611. And that is not the case now, is it?—No; not to the same extent.

1612. Is it not the case that now no soldier can say that he has had his pay stopped, except in instances where he has not been able to perform his duties to his country?—A man's pay cannot be entirely stopped except for the crime of absence without leave or desertion. If a system of fines were introduced for drunkenness, I would suggest that the fines should be appropriated to a fund for men who have put in 21 years' service and are discharged with exemplary character.

1613. You would recommend that the fines should be applied differently from what they are now?—At present the War Office take the stoppages.

1614. And you would recommend that they should be applied to another object?—Yes, if those fines are instituted.

1615. (*Viscount Eversley.*) You would apply the fines as a reward for the good conduct of a soldier after a long period?—I would.

1616. (*Maj.-Gen. Horsford.*) Do you mean in his own regiment?—Yes, in his own regiment.

1617. (*Chairman.*) With regard to the punishment of imprisonment, have you any suggestions to offer?—I should like to see that altered.

1618. In what way?—I would have it more utilized. Shot drill, although it may be very irksome to the men, is of no use to the country, and I would rather see the treadmill introduced, or some means of grinding corn or pumping water, or something of that kind.

1619. Has not the punishment of shot drill this advantage, that you can apply it in whatever quarters the regiment may be?—That is so.

1620. A treadwheel can only be erected at great expense, and very few regiments can profit by it?—No, but you can have it in the military prisons. I presume there is a treadmill in Winchester gaol, for instance, and when the military prisons are full at Aldershot or Gosport the men are sent to Winchester gaol, and I have no doubt they have to undergo the same punishment as any civil prisoner would when he is sentenced to hard labour.

1621. Is it your impression that from the frequency of courts-martial in the army at the present time the soldiers are led not to look at them with that dread that they would feel if they were less frequent?—No, I think a soldier looks upon a court-martial as the fairest tribunal before which he can be tried, and feels sure that if he is innocent he will be acquitted, and that if he is guilty he will be punished. I should be very sorry to see any new system introduced with regard to courts-martial.

1622. (*Capt. Vivian.*) Will you specify what you mean by the new systems that you would object to?—I have heard it suggested that a barrister or civilian should be the president of the court-martial, but that I think would be a very unpopular thing with the soldiers.

1623. (*Chairman.*) Have you any other suggestions to make?—I have not.

1624. (*Capt. Vivian.*) You would object to a barrister being at the head of a court-martial?—Yes.

1625. Would you object to a civilian taking any place as a friend of the prisoner in a court-martial?—There is no objection to that now.

1626. Would you object to the civilian's reading the prisoner's defence?—Yes, I should.

1627. On what ground?—I would rather see an officer of the regiment read it. I think it would be injurious to the prestige of a court-martial for any civilian to address a military court.

1628. How do you mean the prestige of a court-martial?—I think a soldier feels perfect confidence in a court-martial.

1629. But now a soldier who is comparatively an illiterate man is tried by a court-martial, the trial being conducted by a Judge Advocate and a prosecutor both of whom are men of education?—Yes.

1630. The prosecutor draws up the case and gives evidence against the prisoner, does he not?—I should object to the prosecutor giving evidence against the prisoner, and I have objected to it in some cases.

1631. At all events he addresses the court against the prisoner, and sums up against the prisoner?—Yes.

1632. The prisoner being a comparatively illiterate man, cannot prepare his own defence, but he has the power to get somebody to do it for him, and then you say he must read it himself?—The president would read it for him, or the Judge Advocate would do so. But I have already recommended that on a general court-martial the private soldier should have the benefit of the presence of an officer of his regiment to watch the proceedings on his behalf; and if necessary to suggest questions in examination of the witnesses, and to draw up the prisoner's defence and read it for him.

1633. To what other innovations in courts-martial would you object; would you object to courts-martial having the power to declare their finding without its being referred to a superior power?—Yes, I should be very sorry to see that power taken out of the hands of the General of the district or the commanding officer of the regiment.

1634. You wish those powers to remain?—Yes, I do.

1635. Why?—I think they act for the benefit of the prisoner in most cases.

1636. But you know that it is not so in the navy?—I am aware that it is not so.

1637. A naval court-martial has the power at once to announce its sentence, and the result of a military court-martial not being able to do so is that the court-martial is in fact only a court of report; is not that so?—It is more than a court of report, because they come to a finding and award punishment.

1638. But the sentence has no effect until it is confirmed?—It has not.

1639. And it may be entirely remitted, may it not?—That is a power which I should be very sorry to see taken out of the hands of the general officer.

1640. Why do you think it is so necessary?—Because I think it adds to the fairness of the trial. A soldier, if he is tried by court-martial, knows that he has the honour of the court to depend upon, to investigate the case fairly, and beyond that he has the honour of his general officer to see that they have adjudicated rightly.

1641. Supposing a soldier is tried by a regimental court-martial, and the regimental court-martial thinks that the soldier should be punished with a very slight punishment, but his commanding officer thinks that he should be more severely punished, do you think that it adds to the fairness of the trial that the commanding officer should have power to re-assemble that court and insist upon its inflicting a more severe punishment?—But he has not the power of insisting. The court may adhere to their former sentence, and in most cases they would do so.

1642. And during all that time the man is under confinement?—A regimental court-martial does not take very long. If it assembles in the morning the sentence is confirmed in the afternoon. It is generally read at afternoon parade, and the man is sent off to prison.

1643. There may be such a thing as some legal objection, in which case the man would be confined nine or ten days. Do you see any reason why a commanding officer, assembling three officers of a regiment to try a private, and leaving it to them to investigate the merits of the case upon which the man is tried, these officers should not then have the power of declaring what his punishment should be, and of at once announcing his sentence?—I would rather see it left as it is.

1644. That the commanding officer should still have the power to confirm or to remit entirely?—Certainly, clemency at the last moment is often very effectual for discipline. A commanding officer might think it necessary to bring a man to a court-martial, and yet would do quite right in remitting any sentence awarded by the court. Take the case of a non-commissioned officer who is sentenced by a court-martial to be reduced. The commanding officer has power to remit that sentence, whereas if he had no power to remit, the man's position is gone.

1645. With regard to the higher grades of general courts-martial, a general officer on distant foreign command has very great power over the finding of the court-martial. Having been compelled by military law to sentence the prisoner to a certain punishment, the court-martial may think that there are certain circumstances in the case which justify a recommendation to mercy. If the Commander-in-Chief happens to have a bias against the man he may not attend to the recommendation of the court. If, on the other hand, he happens to have a bias in his favour he may entirely remit the sentence. Do you not think that, considering that prisoner has been tried by a court-martial composed according to present law of nine officers, who have attentively tried his case, they would be perfectly capable of deciding upon the punishment that he should receive; and that it is quite unnecessary to make this remarkable distinction between martial law as administered to the soldier and martial law as administered to the sailor?—I am not conversant with courts-martial in India, and therefore I can only speak of those at home, but I think it would tell equally there. The court-martial abroad might pass a severe sentence upon an officer, and yet the general officer might be inclined to remit a portion of it.

1646. Can you give any reason which is satisfactory to your own mind why this great difference between the administration of martial law to the soldier and the administration of martial law to the sailor should exist; why in fact courts-martial for military purposes should be only courts reporting to a superior officer for confirmation, and in the naval service should have the power of at once pronouncing the sentence?—Officers in the army are usually under the command of a general officer present or within easy communication. Whereas in the navy there may be only one or two ships at a particular place, and they have no officer corresponding to a general officer on the spot.

1647. Does any other reason than that suggest itself to your mind?—No.

1648. (*Mr. Mowbray.*) With respect to the revision of courts-martial, you say that a regimental court-martial is generally concluded in one day?—Generally speaking it is.

1649. So that there is no delay there?—There is not.

1650. Is there much delay with the general of a district in confirming the proceedings of a district court-martial?—None whatever, unless he requires to make a reference to the Judge Advocate-General's office.

1651. With respect to general courts-martial, you are in the habit of attending them in those districts where you act as Deputy Judge Advocate, are you not?—Yes, everywhere south of Manchester.

1652. Supposing you go to Chatham to attend a court-martial on Monday, and the trial is concluded that day, you bring up with you the proceedings to the Judge Advocate-General's office?—Yes.

1653. And they arrive at the Judge Advocate-General's office on Tuesday morning?—The first thing on Tuesday morning.

1654. Supposing the prisoner is acquitted, in the ordinary course of things the Judge Advocate-General

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forwards on the same day to Her Majesty a *précis* of the case with his advice upon it?—Instantly.

1655. And he also sends over the original proceedings of the trial to the Commander-in-Chief at the Horse Guards to inform him?—As soon as ever the clerk can do it it is done.

1656. In fact, ever since the practice which came into force about 18 months ago there has been no delay at all in promulgating the result as soon as possible?—None whatever.

1657. In cases of conviction with sentences of imprisonment or penal servitude all such proceedings are from time to time submitted to Her Majesty?—They are.

1658. But the sentence when confirmed dates from the day when it was passed?—When it was signed by the president.

1659. That is to say, neither the penal servitude nor imprisonment are lengthened by a day owing to delay in transmitting the proceedings to Her Majesty?—There is no delay at all. I think that in the very last case of acquittal we had I brought the proceedings to you in the morning, and while I was there the *précis* was taken and it was sent off immediately to Buckingham Palace, and was forwarded that evening by Queen's messenger to Balmoral.

1660. And in all cases of conviction the delay, such as it is, is rather in the prisoner's favour, is it not, because it affords greater opportunity for considering any points in his favour?—Certainly.

The witness withdrew.

Capt. L. A. Hale, R.E.

CAPTAIN LONSDALE AUGUSTUS HALE, R.E., called in and examined.

1661. (*Chairman.*) You are an officer of the Royal Engineers, are you not?—Yes.

1662. How long have you been in that service?—Between 14 and 15 years.

1663. During that time has your attention been directed much to the subject of courts-martial?—Yes, for about the last six years I have studied the subject a good deal.

1664. Officially or merely as an officer of the service?—Merely as an officer of the service. I have always been attached during my service to the Sappers, and therefore I have had more opportunity of seeing the practice of the service in such matters than engineer officers generally would have.

1665. Have you any suggestion to make to the Commission, first of all, as to the constitution of general courts-martial?—With respect to general courts-martial the great fault appears to be first of all with regard to the mode of determining whether evidence shall be received or not. Although the Judge Advocate has a certain amount of power in determining the question, the whole of the 13 or 15 officers who may compose the court have an equal voice upon the subject. The consequence is that any one of those 15 officers may have the court closed, and may divide the court upon every single question which is submitted to it. Therefore that would show that the number is a great deal too large.

1666. But does it follow from what you have stated that the number is too great?—You have 13 different judges, not a jury of 13. I think that it is very desirable first of all with regard to determining questions of law that you should reduce your number. Members of courts-martial are supposed to know military law, but very few of them do; and it is very desirable to reduce the number and increase the responsibility of each member.

1667. Is not the Deputy Judge Advocate who attends each general court-martial the authority who decides the law upon such questions?—I heard this morning that he was, but I was not aware of it. The circular says that his opinion ought to be conclusive, but I am not aware that his opinion has necessarily more weight with the court than that of a member.

1668. What do you consider then to be the duty of the Deputy Judge Advocate?—The duties are defined in the Queen's Regulations, but a good deal is left optional with the court as to whether they will take his advice or not. He cannot control the court according to that circular as I read it. The circular says, that his advice ought to be conclusive on all points of law, but not that it shall be followed.

1669. Is it your opinion that it ought to be conclusive?—Certainly.

1670. (*Capt. Vivian.*) Do you think that it ought to be absolutely conclusive?—Certainly.

1671. (*Chairman.*) And that the court should be deprived of the power which it now enjoys of deciding upon such questions?—Certainly.

1672. And then there would be no objection to the court remaining as it is now of the number of 13?—Certainly not.

1673. (*Mr. Mowbray.*) Are you aware that the number is reduced this year to nine by the Mutiny Act?—I have not seen a copy of the Mutiny Act of this year. I would have the opinion of the Judge Advocate final on all those points. He should rule the court to that extent, but he should not preside over the court.

1674. (*Chairman.*) He does not preside over the court now?—He does not.

1675. With regard to the finding of the court, do you think that the present mode of the junior officer giving his opinion first is a good one?—Certainly, I would maintain that.

1676. Do you agree with the opinion of a former witness that the votes should be given from flanks to centre?—I do not see any necessity for it. With regard to district courts-martial, I should certainly place them under the control of either a president educated in military law or else of an officiating Judge Advocate. At the present moment they are under no control at all.

1677. It is not necessary that the Deputy Judge Advocate should attend a district court-martial, is it?—Not in the least; I would make it obligatory that there should be one; but it would be preferable I think that he should preside over the court.

1678. Why would you make that distinction between a district court-martial and a general court-martial; what reason is there for the Judge Advocate presiding in one case and not in the other?—It was more with reference to having an educated president than to having an officiating Judge Advocate at the district court-martial. At general courts-martial the members are sometimes of very high rank, and it might be inconvenient to have a comparatively junior officer presiding over them. This objection does not apply to district courts-martial if the officiating Judge Advocate had *ex officio* the rank of field officer.

1679. What rank is the lowest which you can have presiding over a district court-martial?—A field officer, except where a field officer cannot be had, and then it should be a captain.

1680. Could a Deputy Judge Advocate always be had for district courts-martial?—No, but you might have men who had passed through an examination in military law, and who would be qualified to act as president of a district court-martial.

1681. Should he be an officer in the army?—Yes, an officer in the army. The point, if I may be allowed to mention it here, at which I would wish to arrive is this: If you concentrate your military knowledge among a few men you will injure the military knowledge of the officers generally. If a general court-martial is to be governed by a Judge Advocate, and a district court-martial is to be governed by a Judge Advocate, and a regimental court-martial is to be governed by a Judge Advocate, the officers will not generally study military law. They do not study it now much, but they would then study it still less. What I think that we should aim at is the diffusion of a general knowledge of military law and the practice of military courts among the officers generally, and

at the same time to hold out appointments as an inducement to officers to study military law.

1682. You say that officers do not study it much?—They do not study it at all that I am aware of.

1683. You are aware that under the Queen's Regulations commanding officers of regiments are directed to examine officers to see whether they are efficient for the purposes of courts-martial?—I think that the commanding officer can only examine them in the Mutiny Act and the Articles of War. He cannot see whether they have any real judicial knowledge or whether they are fit to act as judges. With regard to the constitution of regimental courts-martial, I should certainly keep them as they are, but there are certain provisions which I should like to suggest.

1684. What are they?—First of all I would allow a power of appeal on questions of law and procedure from a regimental court-martial. In foreign services, the codes of which I have studied, a power of appeal lies from nearly every court. Regimental courts-martial as they are now constituted and according to the custom of the service are more instruments in the hands of commanding officers than anything else. By the Queen's Regulations a commanding officer is almost forbidden to send for trial any soldier unless a conviction is pretty certain, and there is a General Order, Horse Guards, 7 May 1801, to the same effect. The consequence is that when a soldier comes before a court-martial the officers of that court know that the commanding officer is liable to censure if the prisoner is acquitted, and the prisoner himself knows of the existence of this Regulation, that he would not have been sent there if the commanding officer had not thought that he was guilty. Now I maintain, with all due deference to those who are of a contrary opinion, that that puts the prisoner in a very wrong position, and puts the officers in a very wrong position also. They naturally have a sort of bias (though I do not say that they feel it) against the prisoner. They think he must be guilty, or else he would not be there, because the commanding officer would not lay himself open to censure. I think that that is a faulty regulation. The consequence is that regimental courts (though I do not say it prejudices them) are accustomed to judge nothing but guilty men, and when a case come before them which is really a matter of evidence on both sides, I do not think that they are quite in that unbiassed and unprejudiced state of mind that they ought to be. Then I would have an appeal open from this regimental court to some other court, not to a district court, but there should be an appeal on certain points as to whether evidence was rightly or wrongly refused, and whether the procedure was right. I would have an appeal to a court composed, say, of a field officer and an officiating Judge Advocate, and perhaps an officer who had passed an examination in military law.

1685. You would not recommend that there should be a power of appeal from a regimental court-martial to a district court-martial?—No.

1686. Nor from a district court-martial to a general court-martial?—I should prefer having a separate court of appeal.

1687. (*Viscount Eversley.*) Of how many officers should it consist?—I think three would be enough. I have not that dread of barristers myself which most officers appear to have; and I think that if a barrister could be got upon the court of appeal it would be a great advantage.

1688. (*Maj.-Gen. Horsford.*) Is that the French custom?—It is not so in France, but it is in Belgium; and it is the same in the Italian service.

1689. (*Mr. Mowbray.*) You would have your court of appeal consist of two officers and a barrister?—Of two officers and a barrister.

1690. (*Capt. Vivian.*) A field officer, an officer versed in martial law, and a barrister?—Yes.

1691. (*Chairman.*) How would you arrange the courts of appeal, would you have a court of appeal in each district?—That must depend upon circumstances. I could hardly answer that question. A great fault I think in our system is, that we try to make the same system applicable in Otaheite which we use in London. It is obvious that a civilian in Otaheite does not have the same advantages which we get in London as regards the administration of the law. Why are you to have an inelastic system which must be used in London and Aldershot because it may be used in the Falkland Islands.

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1692. But applying it only to England, how would you propose to distribute the courts of appeal in this country?—Perhaps one to every military district, but I have hardly gone into the details.

1693. But in a case of this kind a good deal depends upon carrying it out in detail?—Exactly. You might take two divisions and have one court of appeal for the two divisions if you found that there was not work enough in one division. In the same way in the French service; they have eight courts of appeal; they found it necessary to reduce the number on account, of course, of the variety of conflicting decisions; and therefore they have fewer *conseils de revision* as they are termed than they had at first.

1694. Are they arranged in districts?—There are eight courts of appeal and there are 21 districts. In 13 of these a second military court sits, making eight appeal courts to 34 of first jurisdiction.

1695. But you know that France is divided into districts with a certain number of courts of appeal?—Yes. Then again with regard to regimental courts-martial, the position of the prisoner before those courts is altogether wrong in my opinion. He has no defender at all. Under the foreign systems, in France, and Belgium, and Italy, the prisoner has a *défenseur*. If he does not make choice of somebody to defend him the president of the court chooses somebody to defend him, who may be either a military man or a barrister. I am told that in France if a barrister is called upon for that duty he is bound in honour to accept it, and therefore they have no difficulty there, though we might have a great amount of difficulty in England in obtaining that assistance. At present you cannot get an officer or a man to defend a prisoner, or it is very difficult to do so, for the reason which I have already stated. If my commandant at Sandhurst ordered a man to be tried I should know that that man would be convicted, since for the reasons I have mentioned we try hardly any but guilty men in the service, and I should not like to appear in the court in direct opposition to my commandant, though I might do it if I thought that it was an extreme case and if I thought that the man was innocent. A non-commissioned officer to whom I was speaking yesterday told me that in his old regiment a prisoner was tried by a regimental court-martial, and he got an intelligent soldier to defend him, and the non-commissioned officer's words to me were, "He never forgot it. The colonel never "forgave him." It is a very natural thing, I think, if a colonel is to be censured for sending a man to trial, that the colonel should not regard with a favourable eye the man who defends the prisoner and gets him off. Then there is a great deal of unnecessary record in a regimental court-martial, and a great amount of writing. We know what the practice is; the president of course governs the court pretty well, and he says to the member on his right, "You write the "proceedings, will you not?" and the member says, "Yes, I will write them," and he rattles them off as quickly as he can, questions and answers. It is very weary work to sit on a court-martial. Members get wearied with all those proceedings, and the consequence is that courts cut examinations short. They do not like the trouble of entering all those questions, many of which doubtless are rather irrelevant; but the prisoner may feel rather hardly dealt with if they are not put. I may mention a case in which I was prosecutor where a prisoner was tried for being drunk, and this question was put by the prisoner in cross-examination of a witness—"Have you not said "that you would be down on me the first opportu-"nity?" "Oh," the president said, "I do not think

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"that there is any need to enter that question. We "are not trying you for what the witness said, but we "are trying you to see whether you were drunk or "not." I knew that the man was drunk, because he came to me drunk. After that question had been put the court thought it over again, and the president said, "Well, if you like we will enter "the question." "No," the prisoner said, "I do not "care whether the question is entered or not." If that question had been entered, and it had been shown that it had not been allowed to be put, I doubt very much whether it would have been approved of finally.

1696. But that is a defect which may arise in any court; it is an omission of duty upon the part of the officer?—Yes; but if this non-commissioned officer had had some educated man to look after his interests it would not have occurred. If I had been looking after his interests I should have insisted upon its being put, or at all events upon its being on record.

1697. (*Lt.-Gen. Eyre.*) You said that an officer's being employed as a defender for prisoners in general would place him in an unpleasant position with his commanding officer, but if an officer was told that it was his special duty to take up that line and to be the counsel, as it were, of the prisoner, with power to cross-examine witnesses, surely that unpleasantness would never exist?—I think that very few officers would care to undertake the task of defending a prisoner in every case. I might have a thorough scoundrel in my company, and having investigated the circumstances myself, knowing that the man's case was a bad one, and that he was a blackguard and altogether guilty, I should not wish to appear before the court as his defender.

1698. Supposing an officer of a regiment were told off, not merely Captain A. to-day and Captain B. to-morrow, but specially to be the asseseor, or the military defender of the prisoner, with all proper powers, surely that unpleasantness between him and his commanding officer would never exist in our service?—Of course your experience will be greater than mine, but do you not think that it would be unpleasant to have an officer in the regiment known as the "prisoner's friend."

1699. Not a bit. He would be a very useful man to his commanding officer. He should merely watch the interests of the prisoner, and it might be, say, a captain who performed that particular duty?—I am assuming that that takes place under the present regulations. Under the present regulations a commanding officer sends to the court-martial every man who he feels convinced is guilty, and by your supposition another officer attached to the regiment is doing all he can to get off every man.

1700. But you must apply that to every case civil and military?—The difference is that you have a man permanently in the regiment who is employed to look after the prisoner's interest and get him off if he can.

1701. That is the duty of every counsel for a prisoner?—Yes.

1702. (*Maj.-Gen. Horsford.*) At present is it not the Judge Advocate's duty to look after the interests of the prisoner?—Not to try and get him off. This officer must get up the defence and he must examine witnesses beforehand, in order to defend a prisoner properly.

1703. (*Lt.-Gen. Eyre.*) Would he not do what the adjutant does now, but more efficiently and more independently, it being his special duty?—I do not see how it would work. If the regiment were in a state of insubordination how could an officer go to the prisoner and get from him and his comrades evidence against his commanding officer? I do not think you would find that officers would do it. Every officer is interested in keeping up the discipline of the regiment, and an officer would object, I think, to try and get up a case for a prisoner.

1704. (*Mr. Mowbray.*) In fact you think that there should be confidential relations between the prisoner and any one employed to conduct his defence?—Quite so.

1705. And that he should be able to disclose to the person conducting his defence anything which he may think necessary?—Exactly.

1706. And yet that it might be occasionally inconvenient that he should make those disclosures to a person holding superior military command over him?—Exactly so. There is another instance, if I may bring it forward, which would show the want of a *défenseur*. On a court-martial on which I sat at Aldershot, a prisoner was charged with making a frivolous and vexatious appeal against his commanding officer. I happened to know the circumstances of the case, and that the complaint was not frivolous and vexatious. When the prisoner was brought before the court, to my utter astonishment he pleaded "guilty;" I knew, as I say, what the circumstances were, and was enabled to conduct a cross-examination which elicited evidence to show that the complaint was perfectly just against his commanding officer, and the consequence was that the court, if I remember rightly, recommended the prisoner to alter the plea, or at all events sent in such a finding as enabled the prisoner to escape. Then we asked the man "Do you know the nature of this charge against you?" He said, "Yes, I made a complaint." "Yes," but we said: "it is a frivolous and groundless complaint. "Oh!" he said, "I don't know what that means."

1707. (*Chairman.*) You think that if he had been advised that could not have happened?—It could not. Then there is no appeal at present from regimental courts for irregularities. You are not sure that the record of the court will be correct; you cannot tell what questions are refused, or anything of that sort; you have no check upon the proceedings of the court; but there would be a check if this power of appeal which I venture to suggest existed. The court is supposed to be public, but it is not public. The court is frequently held in the ante room or mess room, and no soldier would think of going in and listening, and it would be dull work for him if he did.

1708. Do you think that it would be advantageous that all courts-martial, whether regimental, district, or general, should be open to the public?—Very much so. That would be a check upon the court at once, and then I should lay particular stress upon that alteration of the regulation which prohibits commanding officers sending only men whom they think "guilty" for trial. Regimental courts-martial are too much courts for giving greater punishments than commanding officers can give. They lose sight of the fact that they are courts for the investigation of whether a man is guilty, or not guilty.

1709. (*Mr. Mowbray.*) You do not agree with what a previous witness has said to-day; you do not feel it to be a necessity that a regimental court-martial should award a higher punishment than a commanding officer could award of his own power?—I do not, because the commanding officer has not the time to investigate cases which may be brought before him. In the case, for instance, of drunkenness, it is a very difficult thing for a commanding officer to determine in the orderly room, where the evidence is not upon oath, where perhaps a man is brought up a very few hours after the alleged offence, whether the man was drunk or not. With regard to habitual drunkenness, that is a very common crime, as the Commissioners are aware. The court take their seats, the adjutant comes, he brings the record and the defaulter's sheet. It is simply recording the number of instances, and receiving the proof of one other instance of drunkenness; courts are over and over again called to do that. That tends to increase the feeling that the man is guilty, and that they merely act as a court of record and give the higher punishment.

1710. Instead of that second court-martial which you have suggested, would it not be better to have a regimental court-martial composed of a higher class of officers, such as a field officer, two captains, and two lieutenants, instead of the court which they have

at present, which is generally a captain and four young subalterns?—Yes; although I have been saying that you should not have an inelastic system, it is very desirable, considering our regimental system and a great number of detachments that we have, that you should not render the presence of a field officer absolutely necessary. If you get a captain and two subalterns your court is constituted; that is a great advantage of course, but if you were obliged to have a field officer there would be great inconvenience in it. Although it seems hard that the officer should be practised at the expense of the men, I think it is desirable that the regimental officer should be frequently on regimental courts-martial.

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1711. (*Lt.-Gen. Eyre.*) Would not courts-martial if composed of the higher class of officers become more rare, because no doubt the change would be accompanied with more power to commanding officers to deal summarily, giving a prisoner a power of appeal?—Certainly; I think it would be a great improvement to make them more rare, perhaps by adopting the system of councils of discipline, as they are called in the Belgian service. Men who do not commit crimes, but who are a bad lot, are not tried by a *conseil de guerre*, but they are sent before this council of discipline and punished by that. I think our courts-martial are rather too common.

The witness withdrew.

Adjourned to Thursday the 22nd inst. at 12 o'clock.

Room E., House of Lords.

Thursday, 23rd April 1868.

23 April 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER, C.B.
CAPTAIN THE HON. J. C. W. VIVIAN.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

CAPTAIN LONSDALE AUGUSTUS HALE, R.E., called in and further examined.

1712. (*Chairman.*) Have you any remarks to offer to the Commission in addition to your former evidence?—There are one or two points to which I should like to refer. The last question but one, No. 1710, I did not understand rightly. The question was? "Instead of that second court-martial which "you have suggested, would it not be better to have "a regimental court-martial composed" in such and such a manner? I did not hear those words "instead "of that second court-martial," because I presume that second court-martial refers to the court of appeal which I suggested, and that would not be any substitute for it. What I intended to convey by my answer was, that it would be better to have a regimental court-martial constituted with officers of a higher rank than at present, but that it would be inconvenient to the service to have it so constituted.

1713. Have you any other suggestions to make in addition to those which you made in your former examination?—With regard to the mode of procedure of regimental courts-martial, the recording every question and recording every detail that happens creates a great deal of unnecessary writing. The president of a regimental court-martial is compelled to keep a journal of the proceedings in addition to noting down the evidence. I have drawn out here a simple case of habitual drunkenness; I have not put in any evidence at all, and I have drawn it out according to the Queen's Regulations on one side of the page, and I have drawn out on the other what I consider to be necessary; if there were certain precedents which every court must follow, and which the president at the end was bound to certify had been followed, a great deal of this record might be cut out. For instance the president has actually to write that the names of the president and the members of the court are severally read over to the prisoner, and that they severally answer to their names. If you are trying several prisoners I cannot see the use of writing that over and over again. Then again they must say that "sapper so-and-so "is brought a prisoner before the court." Of course he is, but I do not see any necessity for entering that on the record. The consequence of all this extra writing is that when you want to cross-examine the prisoner, the court do not quite like your putting a great many questions if they appear to be at all irrelevant, though not from any wish to prejudice the prisoner. I have myself when acting as prosecutor in rather a difficult case before a district court-martial been obliged to yield to the almost remonstrances of the president of the court, and not to press my questions, simply because he had to write down every one.

1714. You propose to omit any statement that the Order for convening the court is read, and that the names of the president and the members were read over, and you also propose to leave out this question: "Do you object to be tried by me as the president, "or by any other of the officers whose names you "have heard read over?" and you have put against that that the prisoner is merely called upon to say "Guilty" or "Not Guilty;" but surely that is a very great protection to a prisoner, is it not?—I would always have the question asked. If I may be allowed to refer to the French service there are certain points which must be followed in the French service, which are known and which must be attended to.

1715. And you would have it recorded that all those questions were asked?—Yes.

1716. (*Capt. Vivian.*) In one general question?—Yes.

1717. (*Mr. Mowbray.*) Is your objection to its being necessary that the questions should be asked, or to the time that it takes to record them?—The time that it takes to record them during the time that the trial is going on.

1718. Might not that be obviated by adopting at regimental courts-martial the system adopted at district and general courts-martial?—Quite so, but there is no regulation for that being adopted at regimental courts-martial.

1719. (*Chairman.*) Do you know why the president of a regimental court-martial is obliged under the present regulations to write down the answers in his own handwriting?—I do not know the reason for

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it. It need not be written in the president's handwriting, any member of the court may write it.

1720. (*Mr. Mowbray.*) You know that the adoption of printed forms at district and general courts-martial has been attended with great convenience as shortening the proceedings?—Yes.

1721. Do you know any reason why that system should not be adopted with regard to regimental courts-martial?—I do not.

1722. (*Lt.-Gen. Scarlett.*) Do you happen to know why at one time there was a very strict order that everything should be written in the same hand and to the full extent and with a certain form?—I can imagine what the reason would have been, but I do not know it.

1723. (*Mr. Headlam.*) I think I understood you to say that you had abstained from putting questions rather to save the trouble of the court in writing down such particular question?—Yes.

1724. Then the suggestion which you now make of printed forms would not obviate that?—Not in the least.

1725. But you would not go on to suggest that with regard to any such questions as those to which you have alluded, they should not be put down?—I would not have the questions written at all. I would merely have the answers written.

1726. Then how could the revising authority, whatever it might be, judge as to the propriety of the questions?—I should imagine that from its being put in the form of an answer he could tell whether the evidence was admissible or not.

1727. The effect would be, would it not, that it would quite preclude the possibility of forming any opinion as to the propriety of the manner or form in which the questions had been put?—Under the present system cross-examination is simply impossible.

1728. Why so?—You have to write your questions and you have to hand them in, and there is all that delay. You cannot press a witness at all. The particular case to which I have referred was a case of stealing gunpowder at Gibraltar. It was a district court-martial. I had very good reason to believe that the man was perjuring himself, and I was obliged to write down every question and hand it in.

1729. (*Lt.-Gen. Scarlett.*) But you are not obliged to write a question and hand it in in districts courts-martial?—It must have been a general court-martial then. It is some years ago. The question is written down by the president.

1730. But it is not written down on a piece of paper and handed in at district courts-martial?—No. But you have to dictate the question slowly to the president while he writes it down, and all this time the prisoner is preparing an answer.

1731. (*Mr. Headlam.*) That does not apply where a shorthand writer takes down the proceedings?—It does not.

1732. But when you say that cross-examination is precluded it merely means that there is a certain delay between the questions?—Exactly.

1733. But it is not precluded in any other sense than that there is such a delay between the questions?—No; there is the time between the questions, and I think that officers in asking the questions put longer questions than they otherwise would, and try to condense into a few questions what it would be desirable to put in many questions.

1734. (*Lt.-Gen. Eyre.*) I think that in your branch of the service you have very little opportunity of being practically acquainted with the duties of courts-martial?—As a rule we have not.

1735. Have you yourself been on many courts-martial?—I have been on very few.

1736. Then your suggestions and the knowledge which you possess are based on your having studied the subject, rather than upon your actual experience?—Yes, and upon conversations with other officers on on the subject.

1737. It is not from your own experience as a member of courts-martial?—I have not been on many courts-martial.

1738. (*Capt. Vivian.*) Do you not think that it would be difficult to convey to the person who had to decide afterwards upon whether a question was relevant or irrelevant, the relevancy of that question, unless the whole of the details of that question were before the person referred to, that is to say, the Judge Advocate, or whoever it might be?—I should have imagined not, by entering the answer very fully.

1739. But, for example, if a prisoner is examining a witness and he puts a question to which the court objects, according to your plan, if the question put before that had not been put down, surely whoever was to decide whether that question was relevant or irrelevant could not do so, because he would not know what the context was?—There might be some difficulties of that sort.

1740. (*Chairman.*) Will you proceed with any further remarks which you may have to make?—With regard to a point as to courts being censured by commanding officers, I have had no experience of that myself; but I have made it my business to ask officers about it, and so far as I can find out, it is a notorious fact in the service that commanding officers do censure courts in private. I have not the least objection to courts being censured if they are wrong, but what I object to is courts being censured in private by commanding officers, either for the sentences or for the verdict. If the court have given a wrong sentence, surely it is a matter for public censure, and not for private censure. Over and over again I have spoken to officers upon the subject, and they have one and all told me that they have been censured very strongly indeed by commanding officers, both for the verdicts and the sentences. Of course I have no means of judging who was right or who was wrong, but even if they were wrong I respectfully maintain that the independence of the courts, as courts of justice, is very much threatened by its being in the power of a commanding officer to send for a president or for the members in private and to censure them.

1741. But is it a real censure in a military point of view or it is merely an expression of the private opinion of the commanding officer that the court had erred in their judgment?—It has been expressed to me in such homely language, for instance, as this: "The commanding officer sent for me and pitched "into me tremendously for that verdict."

1742. (*Lieut.-Gen. Eyre.*) Have you heard of this as a common practice, because I have never heard of such a thing?—Yes, I have.

1743. Do you not think that you are mistaken as to the intention of the reprimand, as you call it; is it not probable that it was some particular conduct on the part of one of the officers complained of by the president without reference to the finding and sentence to the court?—I am merely mentioning the impression that was conveyed to me by the officers who have been reprimanded, and as I say their language to me was that they were "pitched into" by the commanding officer for not having found the man guilty. I myself have never come under that censure. With the greatest possible respect for the Commission, I beg distinctly to adhere to what I have stated; that it is an impression among the officers, to whom I have spoken, that they have been found fault with by commanding officers, whether rightly or wrongly I do not pretend to pass an opinion, but in private, for the sentences, or verdicts, they have given.

1744. (*Mr. Whitbread.*) Do you think that they will be willing to come and give evidence on that subject?—I dare say that they would not.

1745. (*Lieut.-Gen. Eyre.*) You do not know yourself of such being the case?—It has not happened to me.

1746. Can you quote an instance of it?—I do not wish to give the names of the officers.

1747. You have witnessed nothing of the kind yourself?—I have not.

1748. (*Chairman.*) Would it not be a military offence on the part of the commanding officer of a regiment to reprimand an officer of his regiment for the part he had taken in a court-martial?—Yes, but it would not be an offence to reprimand a court, or to find fault with a court openly.

1749. (*Maj.-Gen. Horsford.*) Openly, and on the documents themselves he may make his comments, showing wherein he disagreed with the court?—Yes, exactly.

1750. But in secret he cannot do it?—No.

1751. (*Lieut.-Gen. Peel.*) Would it not be open to an officer so reprimanded to complain of the conduct of his commanding officer?—Quite so.

1752. (*Chairman.*) Have you ever heard of an officer so treated by his commanding officer making a formal complaint?—No.

1753. (*Mr. Whitbread.*) This is not a mere matter of conversation, but you have heard this stated by officers who have been themselves subjected to this kind of private reprimand?—Yes.

1754. Upon what ground was this reprimand administered; was it for having awarded too light a sentence?—I think it was something of that sort, if I remember rightly.

1755. (*Mr. Mowbray.*) Does it ever go to the extent of finding fault with an acquittal as wrongful, and stating that there ought to have been a conviction?—I could not state that definitely.

1756. *Lt.-Gen. Scarlett.*) Would you propose to have a court of appeal?—I propose to have a court of appeal.

1757. (*Lt.-Gen. Eyre.*) Like the French?—Like the French.

1758. They have three courts of appeal, in fact, have they not?—No; one court of appeal only. There is a *Conseil de Revision.* There may be an appeal to the Civil Court possibly in some very special cases. There is one other point to which I should wish to refer with regard to the procedure of courts-martial, and that is with regard to the authorities which may be brought before courts-martial upon points of practice, and so forth. There is a very great diversity on such points. This does not apply of course to small courts, where a man is tried for habitual drunkenness, or any thing of that sort; but where an officer or a man is tried before a general court-martial. I have here one or two instances of this. At the trial of an officer in the 46th Regiment, about 10 years ago, or rather more, at the commencement of the Crimean War, that court stated that they only received the Mutiny Act as their authority. At a court-martial upon Lieutenant Hyder, of the 10th Hussars, about the year 1839, not only did they receive "Simmons on Courts-martial," but they received "Starkey on Evidence." At Douglas's court-martial in Guernsey, Simmons, the identical book which had been accepted before, was refused, and in that case Simmons being refused had a most injurious effect upon the prisoner's interest, because in Simmons there is a particular Horse Guards' Order which bore upon that case, and the only way apparently that the prisoner there had of bringing the Order at once before the court was to produce Simmons. They said "Simmons is no authority;" but Simmons does actually contain Horse Guards' authorities; and you cannot be sure of course when you go before a general court-martial whether the authority which you have relied upon will be accepted or not.

1759. (*Lt.-Gen. Scarlett.*) Would you not be obliged, in order to prove the Horse Guards' Order, to produce the Horse Guard's Order in a book not direct from the Horse Guards?—On points of practice I suppose that Simmons with some courts would be authoritative. There are many points of practice which are not laid down. It is received by some courts as authority.

1760. Do you consider that the courts are obliged to take this authority?—They are not.

1761. But you say that they do take it?—Some of them do.

1762. What would you suggest?—I would suggest that there are certain points in the procedure of courts-martial and so forth which are not exactly laid down in the Queen's Regulations. There are points which have been raised once or twice during general courts-martial. It is rather more a legal point than a matter of procedure, I presume, whether a witness for character may be cross examined. That point has been raised at two different courts-martial and decided in the same way. If those different points were laid down authoritatively in some short code, which could be laid before a court, I think it would be beneficial to the service.

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1763. (*Mr. Mowbray.*) Your objection points to the insufficiency of the military code and of military law as found in the Mutiny Act, the Articles of War, and the Queen's Regulations?—And Horse Guard's Orders, which we cannot get at, of course.

1764. But any treatise on military law would have no authority except such as it derived from the learning of the man who wrote it?—Exactly.

1765. It is the same as with a judge in a civil court. The law which he administers is the law of the land, the common law, the statutes, or the decisions of the judges, which carry authority with them; and any treatise, however learned, is merely an authority, which a counsel may cite or bring before them, but it is not conclusive?—No. There is one point illustrative of that which occurred in India in the year 1839. An officer who had voted for a prisoner being "Not guilty" declined to vote on the sentence. He said he did not think the man was guilty, and he would not vote for the sentence. He was tried by court-martial for refusing to vote on the sentence, and it had been laid down in London in 1834, by the Judge Advocate General (I do not know who was the gentleman occupying that position at that time) that an officer was bound to vote for the sentence, whether he voted for "Guilty" or "Not guilty." If that had been authoritatively put before the court in some short code that officer would never have been tried by court-martial; but it is nowhere laid down in the Queen's Regulations that an officer is to vote if he thinks a man "Not guilty."

1766. (*Mr. Whitbread.*) What you want is a short manual of decisions to guide the courts in future?—Yes; decisions, and remarks, and so forth.

1767. (*Mr. Headlam.*) Published by authority?—Published by authority.

1768. (*Mr. Mowbray.*) There is no doubt, is there, that military law is rather confused?—It is rather chaotic.

1769. And it is somewhat imperfect?—No doubt.

1770. But those deficiencies should rather be supplied by a code of military law emanating from authority than by authorizing courts to receive treatises, however valuable they may be, or however learned the people who write them?—Exactly so.

1771. (*Capt. Vivian.*) Do you not think it would be advisable that some public record should be kept of the reasons why the decisions of courts-martial are sometimes reversed?—Yes.

1772. That is to say, that occasionally it happens that a court finds a prisoner guilty, and sentences him to a certain punishment. That punishment is confirmed by the confirming officer, and then, after a time, one finds, somehow or another, that the whole of the proceedings of that court are quashed; but no one knows why—probably it is by something illegal which has taken place. Do you not think it would be advisable, as a guide for future courts-martial, that the reasons why the decisions of courts are reversed should be published in some way?—Certainly.

1773. It is the practice in civil courts. When there is an appeal to a higher court, that the reasons why the judges reverse the decision of the inferior court are given in open court, and this, if not written law, at all events guides future decisions; do you not think it would be advisable that it should be the same in courts-martial?—Very much so. That reminds me of one other point bearing on the same thing. There

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is a letter from the Judge Advocate General's office with regard to a court-martial upon a man in the 10th Hussars. It is there stated that the prisoner should be allowed as much licence of cross-examination as possible. I think it would be very beneficial if it were known throughout the service that such a decision had come from the Judge Advocate General's office. I only happened to have seen it because a friend showed it me; but if I were to act upon that, upon the next court-martial over which I were to preside, the court, of course, would say that they knew nothing about that letter.

1774. (*Chairman*). Is there any other point upon which you wish to make any observation?—Fault has been found with courts-martial for admitting irrelevant matter to a certain extent, which, of course, prolongs the proceedings. I should like to bring to the notice of the Commission a case which occurred in India, in which the court explained the length of their proceedings in a remark which appears to have passed without comment. They said "the peculiar "nature of the charge, involving as it did the character "of the prosecutor, no less than the conduct of the "prisoner, rendered it indispensably necessary that all "the circumstances bearing on the one or the other "should be fully inquired into, and hence the length to "which the proceedings extended." That, therefore, would be almost a justification to any court to go into almost any amount of irrelevant matter. I merely mention that as an illustration.

1775. Do you wish to offer any observations to the Commission with regard to military punishments?—I do not.

1776. Have you had any opportunities of judging of the effect of military punishments?—No, except that having been with sappers for the last 12 or 13 years, the punishment for habitual drunkenness by stoppage of pay seems to me to be quite useless. A man gets drunk whether he gets pay or not. If he is an habitual drunkard we cannot stop him from drinking, and I am afraid there are a good many of that sort of men.

1777. (*Lt.-Gen. Scarlett*). What punishment would you propose to inflict for habitual drunkenness?—I should like to get rid of the man after his second conviction for habitual drunkenness. I do not think a man would go and get habitually drunk on purpose to get his discharge.

1778. (*Chairman*). You do not agree with the evidence of a former witness that some of the drunkards are good soldiers in other respects?—I do not think we find it so in the engineers. They require so much looking after.

1779. (*Lt.-Gen. Eyre*). Do you think an habitual drunkard (taking the word "habitual" in a strict sense) an unfit man for a soldier?—I think he certainly is an unfit man.

1780. (*Chairman*). Have you any other suggestions to make to the Commission?—No.

Adjourned to Monday next at 12 o'clock.

Room E., House of Lords.

Monday, 27th April 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
CAPTAIN THE HON. J. C. W. VIVIAN.
COLONEL S. N. LOWDER, C.B.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary*.

Col. C. R. Egerton.

COLONEL C. R. EGERTON called in and examined.

1781. (*Chairman.*) You have brought some papers from the Horse Guards, have you not?—Yes, I have brought the proceedings of a court-martial on Serjeant Instructor Cox, of the Grenadier Guards, and all the correspondence on the subject which was called for by the Royal Commission.

1782. Do you hand them in simply, or are you directed to make any observations upon them?—I shall be glad to answer any questions which the Royal Commissioners may think fit to put upon them.

1783. (*Capt. Vivian.*) Have you brought every paper of every kind?—Every paper of every kind connected with that correspondence.

1784. Not the censure, I suppose?—Everything—every letter which has been written.

The witness withdrew.

Major-Gen. the Hon. J. Lindsay.

MAJOR-GENERAL THE HONOURABLE JAMES LINDSAY called in and examined.

1785. (*Chairman.*) I believe you, at the present time, hold the office of Inspector-General of the Reserve Forces?—I do.

1786. And that you have filled several important commands, both regimental and other?—I have.

1787. Has your attention been directed in particular to the constitution and practice of courts-martial?—It has, of course, come before me in the positions which I have held, both as commanding officer of a regiment, and as a general officer commanding a district.

1788. First of all with regard to the constitution of courts-martial, taking first general courts-martial; have you any suggestions to offer to the Commission?—Nothing in alteration of the principle, but some alteration of detail, I think might be made.

1789. What are these alterations which you would recommend?—For instance, in consequence of the appointment of this Commission, a question has been raised, namely, whether a soldier ought to have assistance (I am speaking of a soldier, not of an officer) before a general court-martial.

1790. Is it your opinion that a soldier ought to have more assistance than he has now?—I think he ought to have the option of having an officer to assist him if he wishes it.

1791. Would you confine his selection to an officer of the regiment to which he belongs?—To the regiment to which he belongs—I think that it might be left to the general officer commanding the district to appoint, if the man wishes one.

1792. Then, in recommending that a soldier shall

be able to choose an officer to assist him on his trial, you recommend that it should be open to the discretion of the commanding officer whether he shall be allowed to make that selection in or out of his regiment?—Yes; I would let the man choose for himself, but if he did not and the commanding officer thought it advisable that he should have an officer to help him, I would choose one for him.

1793. Would you allow the soldier himself to choose?—Yes, I would allow the man to choose whom he pleases in his own regiment, and if the commanding officer thought it advisable that he should have assistance, or if the general officer thought it advisable that he should have assistance, I would appoint an officer for the purpose.

1794. (*Maj.-Gen. Horsford.*) Even if he did not wish it?—Yes, even if he did not wish it, so that he should have no excuse for thinking that he had no one to assist him.

1795. (*Capt. Vivian.*) Should that officer read his defence?—If the soldier did not wish to read his own defence I would allow the officer to read it.

1796. (*Chairman.*) The prosecutor in a court-martial is, I believe, allowed to make a speech on the opening of the proceedings?—Yes.

1797. Would you allow the officer selected by the soldier the same privilege on his behalf?—I see nothing against it; I would allow it; I may add here that I have no faith in speeches generally. The court goes by what the evidence proves, and not much by statements in an address.

1798. Would you allow the officer so selected to cross-examine the witnesses on behalf of the prisoner?—I would not; I would pursue the same course as is at present adopted, except that I would have a short-hand writer in a general court-martial.

1799. In saying that you would pursue the same course as is now pursued would you still retain the necessity of every question being in writing?—I would have the questions put and taken down by the short-hand writer.

1800. But would you have the question, as is the case now, submitted to the president of the court-martial before it is put?—I would have it submitted to the president. The rule hitherto has been that a question once put is not erased.

1801. Are you speaking of cross-examination questions?—Yes.

1802. In cross-examination would you have every question submitted in writing?—I think that is the safest plan. I have myself been on two or three general courts-martial, and I have always found that the questions put are put down. In one or two instances only have I ever known a question which was wished to be put refused, and that was refused with the consent of the whole court, and not upon the dictum only of the president.

1803. Do you recollect upon what grounds it was refused?—As being irrelevant to the point at issue.

1804. Have you any suggestions to make with regard to the duties of the Deputy Judge Advocate on courts-martial?—No; I think that in the last regulations those duties are defined in a manner which I can hardly fancy it is possible to improve; they are thoroughly defined.

1805. Would you still retain it as a portion of the duty of the Deputy Judge Advocate to take the part of the prisoner, as is now his duty?—That perhaps would not be necessary if the prisoner had somebody to assist him, but at the same time, in the trial of a private soldier, points of law may arise which the officer who is assisting the soldier may not be conversant with. I think if the Deputy Judge Advocate exercises an influence in that way it would be beneficial to the soldier.

1806. With regard to the trials of officers in some of the foreign armies there is a double court; there is what is called a Court of Honour and a Court-martial; are you of opinion that it might be advisable, or the contrary, to establish courts of honour for the trial of officers for particular offences?—That virtually is what we have now. If an officer gets into an unfortunate position it is usual to order a court of inquiry to assemble first for the purpose of ascertaining whether there is sufficient ground to bring a charge against him.

1807. And you look upon the previous court of inquiry very much in the light of a court of honour?—Except that it has no power of decision.

1808. Have you any other suggestions to make with regard to the constitution or practice of courts-martial?—I think not.

1809. Is it your opinion that, generally speaking, in the British army there is on the part of the soldiers, for instance, confidence in the justice administered under the present system of courts-martial?—I am perfectly confident that there is that confidence on the part of the soldier.

1810. Have you, either officially or otherwise, had cognizance of any serious complaints of want of proper administration of justice from either soldiers or officers?—I have not. From experience I am perfectly convinced that there is no feeling on the part of the soldiers that the regimental courts-martial are not properly and fairly conducted; and, with regard to those of a superior character, they know perfectly well that they come under the revision of an impartial person, who has no object whatever, except to do justice, namely, the general officer in charge of the garrison or the district.

1811. Do you believe that it is the habit in any of the regiments in the British service for the commanding officer to express an opinion to his officers in private as to their conduct upon courts-martial?—It is impossible to say that that has not occurred, and in all probability it is a thing which has occurred; but I should say that it was excessively rare, and perfectly exceptional. I do not think that any man of any position would do such a thing. Afterwards an officer may try to influence in the way of revision by expressing his opinion, but that expression of opinion is part of the proceedings and most unquestionably should not he done *vivâ voce*.

1812. Do you think that any commanding officer who should animadvert upon his officer's conduct in courts-martial would be subject to grave censure in the Horse Guards?—I think that he would. I may add that, with regard to crimes that come before regimental courts-martial, usually they are of a remarkably simple character, so simple that, unless the man was certain to be convicted, he would not be brought to the court-martial at all. I may mention habitual drunkenness, absence, overt acts of improper conduct; they are all simple crimes which are very numerous, but they are so simple that, if they were not facts in themselves, the men would hardly be brought before the courts-martial at all.

1813. (*Maj.-Gen. Horsford.*) They generally plead guilty, do they not?—They generally plead guilty. The custom is, that a soldier before a regimental or a district court-martial has nobody to assist him.

1814. (*Lt.-Gen. Peel.*) But there is nothing to prevent it at this moment?—No.

1815. Nothing to prevent his defence being read for him?—No.

1816. All that you recommend is that it should be made compulsory upon the officer to do so?—Yes.

1817. (*Mr. Whitbread.*) Do you express any opinion about the power of a confirming officer to send back the finding of a court-martial for revision; do you think it likely to inspire the soldier with a feeling of confidence in the justice of a tribunal if the confirming officer sends back the decision of the court with the view, and the avowed view, of getting a severer sentence for him?—That entirely depends upon circumstances. I can tell you two instances in which I have done it myself within the last two or three months. First of all, I would say that it is perfectly necessary whenever such a thing is done that full explanation should appear upon the body of the proceedings, of why you do it. The circumstance that occurred was this:—A man was

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tried before a district court-martial for first desertion. Desertion, I am sorry to say, is not considered a very serious crime by the men, and the usual punishment for a man on his first desertion is generally light. The man was tried for desertion, making away with necessaries, and there was a third charge for fraudulent enlistment in another regiment.

1818. (*Lt.-Gen. Peel.*) Was that fraudulent enlistment subsequent to the desertion?—During his desertion. The punishment that he received was 56 days imprisonment with hard labour, which is the usual punishment which a man gets upon his first desertion. I sent that court-martial back for revision, stating upon the face of it that desertion was a very serious crime, that the man had received only the usual punishment given for a simple act of desertion, with making away with necessaries; and that fraudulent enlistment was cheating the public and a disgraceful act in itself; and, therefore, that I thought the man was worthy of a heavier punishment than the 56 days. The Court revised their sentence, and gave him 84 days. The whole of those proceedings were read out to the men, and I conclude that there was not a man who heard them that did not agree with the justice of what I had said. All the regimental courts-martial come before the general officer every month, in the courts-martial returns, which are very closely looked at; and where a court is revised it is recorded. Sometimes I have interfered in regimental courts-martial, and something being, as I thought, irregular; I have sent for the court-martial itself from the regiment, and read it, and I have ordered a man to be released. The whole of that is in the power of a general officer commanding a district.

1819. (*Lieut.-Gen. Scarlett.*) It has occurred to you that regimental courts-martial have come under your notice which have been re-assembled by the confirming officer for the purpose of inflicting a more severe punishment, and you have thought it necessary to interfere?—I have.

1820. (*Mr. Whitbread.*) Do you not think that on the whole it would be a better plan to limit the power of any authority higher than the court-martial to mitigation of sentence?—I do not think so. The opinion I have formed from my experience of officers is that they are very independent. It has occurred to myself, when I have revised a court-martial, that the officers have adhered to their decision.

1821. Do you think that is for the benefit of the service, and does it tend to maintain discipline in a regiment, when a commanding officer sends back a court-martial for revision, and the Court adhere to their sentence?—The general officer would then say, "confirmed" or "confirmed but disapproved," and state his reasons. I have never found that in any way discipline has been in the least relaxed by it.

1822. (*Lt.-Gen. Eyre.*) Or he might not confirm or approve, and so the man remains unpunished?—Yes, where it is a slight case I have known such an instance as "not confirmed" and "sentence remitted."

1823. (*Mr. Whitbread.*) But the power of this revision is founded, is it not, upon the assumption that the regimental court-martial is not a body fit, finally, to pronounce a sentence?—You must have some superior authority; you must always have some court of appeal. There was one point in the questions that the Chairman asked me some time ago, to which I should like to recur again. I think it would be a very good thing if there was an appeal for the private soldier from a regimental to a district court-martial.

1824. (*Lt.-Gen. Scarlett.*) Has he not that privilege now?—No; he has an appeal to the General, unless it is altered this year.

1825. (*Mr. Mowbray.*) Have you had your attention much called to cases of embezzlement?—Yes; I have had a great number of cases of embezzlement in Canada.

1826. Do you not think a court-martial is a very bad tribunal for trying such cases?—I am glad I have been asked that question, because I have a strong view as to the management of those cases. My own opinion is that those cases, where they occur within a barrack, ought to be tried by a court-martial; but they are often difficult cases that require assistance. I would extend the position of the Deputy Judge Advocate to cases of that sort. They are cases which are very intricate. They are generally cases in which you have no direct evidence, and in which the evidence is presumptive, and I think that courts-martial, that try men for stealing and other disgraceful conduct, ought to have a Deputy Judge Advocate to attend them.

1827. They are intricate as to facts?—They are intricate as to facts, and very often they fall to the ground, either from want of care, or from ignorance upon the part of the prosecutor.

1828. There is great difficulty of legal proof, and there probably would be great difficulty in proving the case in an ordinary court of criminal jurisdiction?—There is always a difficulty, no doubt.

1829. And they are not specially military offences, except that they are committed by persons who are subject to the Mutiny Act?—I suppose you would call that more a civil than a military offence; but still, I think, those crimes committed in military society ought to be tried by their own officers; and with the assistance of the Deputy Judge Advocate you would have what you want.

1830. Do you not think that, in nine cases out of ten, those cases fail for want of legal proof?—They fail for want of legal proof; but, I think, they fail generally, because officers do not readily take presumptive evidence. They are more accustomed to direct evidence, and they often shrink from taking presumptive evidence. My own opinion is that these courts-martial are too favourable to the prisoner, and that the man frequently improperly gets off, and justice is not done on that account.

1831. Those cases frequently involve imprisonment, and a large sum awarded for stoppages, do they not?—Yes.

1832. Are you not aware that the Judge Advocate-General is often obliged to set aside some of those sentences of stoppages for want of legal proof?—I suppose the imprisonment is set aside at the same time.

1833. Not necessarily?—That has not come before me.

1834. But you would prefer having those cases tried by a military tribunal to handing them over to the civil authorities?—I should.

1835. (*Capt. Vivian.*) With regard to the composition of general courts-martial at present in England, they are composed of nine members, are they not?—They are by the new regulation.

1836. Do you think they might satisfactorily be still more reduced?—I do not think so. I think a general court-martial ought to be a very exceptional thing indeed; and, therefore, to reduce it below nine in number, I think, would rather deteriorate the character of the court.

1837. In some of our colonies it is now seven, is it not?—Yes, but that is an exception.

1838. I think a general court-martial which was assembled in the West Indies lately was composed of seven?—I think it was either seven or five.

1839. (*Chairman.*) But that was from the necessity of the case, was it not?—That was because there were very few officers there.

1840. (*Capt. Vivian.*) You have said that you would advise that a soldier should have an officer in his own regiment to assist him before a general court-martial. Why do you limit his choice to an officer in his own regiment, supposing he was in garrison and wished to have an officer of another regiment?—I do not see why he should not have him.

1841. Then you say that the officer should be allowed to read the prisoner's defence, but he should not be allowed to help him in his cross-examination. Why did you make that distinction?—The system of cross-examination leads to a great number of ques-

tions which are perfectly useless, as I have often observed in court; and if each question is written down, I think people would take very great care what they asked, and would have it more completely to the point than if they did it *vivâ voce*. The voice often carries a man away with it.

1842. But I am speaking now of the assistance of the officer, the assistant himself, or the soldier putting questions in cross-examination written or *vivâ voce*?—Practically the soldier does not do it. The question is usually made out for him; it is read before the president, and the Deputy Judge-Advocate puts it to the witness.

1843. You made a distinction in your evidence, and said that you would allow the officer to read the soldier's defence for him, but that you would not allow the officer to cross-examine the witness; upon what grounds did you make that distinction between cross-examination and reading the defence?—Simply that when a man is cross-examining his tongue runs away with him to a certain extent, and I think the thing would be better done by the questions being put by the president and the Deputy Judge-Advocate seeing that the question is to the point.

1844. But would not an officer who would bring an intelligent mind to bear upon the subject, be more likely to confine himself strictly to the question before the court than a soldier who, probably not having such a high education, would be more rambling in his questions, as people of inferior education naturally would be?—As the question is put in writing you escape that.

1845. With regard to the questions in the cross-examination, you know quite well that if you are cross-examining an equivocating witness, or a witness who is suspected of equivocating, if you ask him questions directly you are more likely to press him upon a point than if you give him an opportunity of considering all his answers during the time that the questions are being written down?—No doubt that is a point.

1846. As you recommend that an officer should be permitted to assist a soldier, and as you have also recommended that a short-hand writer should take down the proceedings of general courts-martial, do you see any objection to the questions in cross-examination being put *vivâ voce* instead of being put in writing through the president?—My impression is that it would be better done by its being in writing, because I have very often observed the extreme difficulty there is in stopping irrelevant cross-examination. Persons cross-examining often try to browbeat; they frequently ask questions of which you do not know the drift, and very likely you have to ask them what their drift is before you allow the question to go on; and I think there would be more care and decision if the question were put deliberately in writing than if a rapid sharp cross-examination is conducted.

1847. But then would not the president always have the opportunity equally of stopping a question which he thought irrelevant, although it was put *vivâ voce*, just as a judge now in a civil court stops any questions which in his opinion are illegal or improper?—It is very rarely that a judge interferes with counsel unless for something extremely irregular.

1848. At all events he has the power of doing so?—He has the power, and so would the president.

1849. So would also the president have the power, if the questions were put *vivâ voce*, of stopping the questions which he did not consider to be relevant?—He would have that power.

1850. You do not see any great objection then, supposing the system were altered and the questions were put *vivâ voce* instead of in writing?—So long as it is confined to an officer doing it and is not done by a legal man, I do not see any very strong objection. At the same time I still hold that the thing would be better done, though, no doubt, done slower by the old system.

1851. With regard to those matters of embezzlement, they are almost always very intricate cases; since you would still confine them to courts-martial, if charges of that nature are still to be dealt with by courts-martial, do you not think that in those exceptional cases it would be well to give a soldier the benefit of legal advice?—There is nothing against the soldier having legal advice.

1852. But if you gave him legal advice would you then allow the lawyer to read his defence?—No; I would keep it strictly to the officer; but I see no reason why, even if he employs a lawyer, there should not be an officer also with him.

1853. Then in that case you would let him have two assistants; the military man to represent him before the court, and the lawyer to watch the case for him?—Yes.

1854. (*Lt.-Gen. Scarlett.*) The answers you have given have been generally relating to general courts-martial for the trial of privates, have they not?—Yes.

1855. But upon district courts-martial and regimental courts-martial a private has a perfect right to cross-examining *vivâ voce*, has he not?—Certainly.

1856. And there is no difficulty in district courts-martial and regimental courts-martial in the *vivâ voce* examination?—None whatever; and if he wishes to have the assistance of an officer there is no reason whatever why he should not have it.

1857. I think you said that a private is very seldom brought to a regimental court-martial without such proof of his guilt that he is sure to be convicted?—Yes.

1858. Then what is the object of the court-martial, the man's guilt being pretty evident?—That brings on a question upon which I hold a very strong opinion. I should like to have the power of the commanding officers considerably extended. They are officers of a certain age and service, and I can see no reason why they should not have the powers of a magistrate, or that they should be intrusted with functions of that description. I would give them increased powers; I would give them the power of placing a man in the cells for 28 days; I would give them greater powers of fining as to drunkenness, and I would increase the power of a regimental court-martial to imprisonment for 56 days, which would be the commanding officer's resort when it was an offence not requiring a district court-martial, but somewhat more than he could himself meet. For instance, absence is a considerable crime in the army, in fact, absence and drunkenness are almost the chief crimes; and I can see no reason why the commanding officer should not punish a soldier to a greater extent, than he can now for absence by placing him in the cells.

1859. (*Capt. Vivian.*) To what is his power confined now?—To seven days.

1860. (*Maj.-Gen. Horsford.*) Would you give the man the power of appeal?—Certainly.

1861. (*Lt.-Gen. Scarlett.*) Would you allow the commanding officer to take evidence upon oath as a magistrate does?—Certainly.

1862. Then what in fact is the use of a regimental court-martial?—A regimental court-martial keeps a certain set of crimes within the regiment itself; crimes of ordinary character. It is composed of a fewer number of members, and therefore it is more easily arranged and settled; but of course the distric court-martial could take cognizance of every crime that the regimental court-martial does.

1863. Do you think that the court acts as a protection to the culprit against any partiality on the part of the commanding officer. A commanding officer may inflict a certain punishment, but he cannot inflict beyond a certain punishment without a trial by a regimental court-martial; therefore it protects to a certain extent the man from the punishment which might be inflicted upon him, but the court-martial may give less punishment than the commanding officer would give?—When the court-martial gives a punishment it may be lesser in period than the commanding officer can give; but the punishment of the court-martial carries with it a loss of service and loss of pay.

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1864. (*Lt.-Gen. Eyre.*) If you give more power to the regimental court-martial as you propose, would you improve the present constitution of those courts, or would you leave them exactly as they are in that respect?—I do not see how you could improve them; I think they work very well.

1865. Would you change the constitution of the court?—I think not.

1866. You have said that you would get more power; do you mean that you would keep the constitution the same as it is now, or that would you change it to a higher class of officers?—I would leave them the same, unless military authorities or the Royal Commission should think that two descriptions of courts-martial were enough; but a district court-martial conveys its meaning by its own name, it is assembled from different regiments. To increase the district court-martial I think would be rather an evil.

1867. (*Mr. Mowbray.*) Supposing that you increase the power of the commanding officer to give 28 days' imprisonment, and he thought 28 days was not enough in a particular case, and remitted the case to a court-martial with a view that they should give 56; and if then that court-martial gave a sentence of 28 days, would you still allow the commanding officer to remit it to the court-martial, and call upon them to revise it with a view to their giving a higher sentence?—I should always retain the power of revision. It would be perfectly competent to the officers respectfully to adhere to their former sentence. A commanding officer has the power of ordering a man seven days' imprisonment; it is not so likely as the case you put; but still I have known regimental courts-martial award that sentence. I maintain that whenever revision takes place explanation accompanies the revision.

1868. (*Lt.-Gen. Peel.*) I understood you to say that a question once put in cross-examination could not be retracted?—I do not mean to say that it could not be retracted, but it is not usual.

1869. Supposing the officer who was to assist the prisoner, and who (as proposed by Captain Vivian) was to conduct the cross-examination *vivâ voce*, did not know the circumstances of the case, he might put a question to the witness which would be very detrimental to the prisoner he was defending, might he not?—He might, certainly; but he ought to get up the case.

1870. Then the prisoner must tell the officer everything, in fact, plead guilty to him?—I should put the officer in communication with the man, and let them do the best they can.

1871. (*Mr. Headlam.*) I understand you to say that the present system gives satisfaction to the privates of the army, speaking generally?—My own impression is that the privates of the army are satisfied, and have no feelings that the courts-martial do not do them full justice; but at the same time there is a feeling abroad, no doubt, that the men should have assistance, and I think that would be a very good way of giving it them.

1872. You would increase rather the summary power of the commanding officer of the regiment?—I would.

1873. Do you think that would not create jealousy in cases where it was supposed that the commanding officer was an arbitrary man?—The power of imprisonment, which is what I alluded to, is accompanied by the power of appeal. If you sentence a man to seven days' cells, he can appeal at once to a regimental court-martial.

1874. You would suggest that from any summary decision of the commanding officer of the regiment he should, if he wished it, be at liberty to request that a court-martial should be summoned upon it?—Yes, he has that power now.

1875. It is never exercised, is it?—I have known it exercised. I have known an appeal from the decision of a commanding officer to that of a regimental court-martial, but of course it is only done when a man's pay is stopped.

1876. (*Lt.-Gen. Eyre.*) Did I understand rightly that you wished to assimilate commanding officers to civil magistrates?—I would give them the powers.

1877. To act as a magistrate?—Yes, it comes to the same thing. I think that the Commission have before them now the proceedings of a committee of which I was chairman, which was to give the power of stopping soldiers' pay for acts of drunkenness, and of fining them.

1878. (*Mr. Headlam.*) With respect to larger crimes you are aware probably that not unfrequently the proceedings of courts-martial before which officers have been tried have not been confirmed, would you suggest any alteration in the mode of proceeding in those more important cases?—I cannot. I think that they get full justice.

1879. You would not wish the mode of trial to be more assimilated to ordinary legal proceedings?—I would not; I would rather keep it as it is.

1880. You would not wish the court to be more under the influence of any legal officer?—I would not. I think that it would be more satisfactory both to officers and soldiers that it should not be so. They should have legal assistance; and I believe both officers and soldiers should feel perfect confidence that they are treated by a body of men who will do them justice.

1881. But does it not happen very frequently that the cases break down?—They do; but I would rather they broke down than that the system was altered. They only break down occasionally.

1882. Is there not an evil if you allow legal assistance on both sides in the absence of legal power in the tribunal to control the legal gentlemen who interfere in the conduct of the case, and in the fact that the court has to decide upon the argument of legal men without being itself conversant with legal decisions and legal practice?—I do not think there is. I cannot deny for a moment that there may be legal questions put forward in a legal shape which may puzzle the court, but that equally applies to jurymen, and it applies to committees of the House of Commons in the same way.

1883. In the case of jurymen, do they not get assistance from the judge?—Yes; but then you have a trained officer, as you may call the Deputy Judge Advocate. It appears to me that, so far as I have seen failures in courts-martial, they have generally arisen from the officers not quite understanding the rules of evidence; and if you have by you a person educated in the way in which the Deputy Judge Advocates now are supposed to be educated and trained, you have somebody to keep the court in order with regard to the evidence.

1884. Do you think that the system of the administration of military justice has been improved by the appointment of Deputy Judge Advocates?—I think so, certainly.

1885. (*Lt.-Gen. Eyre.*) If civil practitioners were introduced as part of the system, do you or do you not think that it would create a great deal of jealousy on the part of officers of the army?—I think it would be very unpalatable indeed.

The witness withdrew.

Col. E. R. Jeffreys, C.B.

Colonel E. R. Jeffreys, C.B., called in and examined.

1886. (*Chairman.*) You, I believe, command the depôt battalion at Parkhurst in the Isle of Wight?—I do.

1887. How long have you been in command there?—Upwards of 13 years.

1888. What commands have you held besides that?—I never was more than a brevet lieutenant-colonel in the 88th regiment, my own regiment. I commanded it from period to period when the colonel was away. I was a major 12 years in it.

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1889. In the course of your service have you had much to do with courts-martial?—Yes, I have, unfortunately, seen a good deal of them.

1890. Have you any suggestions to make with regard to the present system of courts-martial?—If commanding officers were given extra power as to imprisonment, with the right of appeal, I think that a regimental court-martial would be of no use.

1891. What system would you recommend?—I would give the commanding officer more power and do away with regimental courts-martial.

1892. (*Lieut.-Gen. Peel.*) Then that would abolish the power of a soldier to appeal, would it not?—He would appeal to a district court-martial.

1893. (*Chairman.*) Would you give a soldier the power in all cases to appeal from his commanding officer to a court-martial?—Only in cases where he has it now, of imprisonment or stoppage of pay. By the Articles of War now, if I stop a man's pay for two days he can appeal, or if I award him cells he can appeal; but he has no power of appeal from 14 days' confinement to barracks, and I would not give him that power of appeal; but I would increase the power of the commanding officer as to the period of imprisonment, and I would give him power to punish by a pecuniary fine for drunkenness, and I would certainly considerably modify the regulations with regard to habitual drunkenness.

1894. In what way would you do that?—I would not make it compulsory upon the commanding officer to try a man the fourth time.

1895. You would leave it open to his discretion?—I would leave it open to his discretion.

1896. Would you place no limit upon that discretion?—I would not let him go beyond, say eight times; but I have had many instances lately at Parkhurst of young soldiers being tried by a court-martial, which is a record against them for the whole of their service for habitual drunkenness, perhaps with only seven or eight months' service; and I think it is a pity to damn a man's character with a record of that sort.

1897. You do not think that being tried by a court-martial has any great effect in the prevention of drunkenness?—I am afraid that it does not prevent a great deal of drunkenness, but that it causes a great deal of absence.

1898. Do men rather than appear in a drunken state absent themselves?—Frequently a man tells me when I ask him after I have heard the evidence what he has to say, "Oh! Sir, I got drunk, and I thought "it best not to come in until I was sober."

1899. (*Maj.-Gen. Horsford.*) Do you know any reason for their being tried the fourth time?—I only know it from hearsay. I believe that the order was issued in consequence of some colonels doing it and others not doing it, and the consequence was that some regiments had a larger number of courts-martial; and when those colonels were remonstrated with for the numerous courts-martial they had in their regiments they replied, "So-and-so would have had an "equal number if he had tried for four times as much "as I have." I fancy that that was the origin of it.

1900. (*Chairman.*) Have you any suggestions to make with regard to the constitution of the court?—I think that a district court-martial of a field officer or a captain of experience as president and four officers, would be quite sufficient; and I would leave a general court-martial with nine members, as at present; I think it is a more formal serious court.

1901. At the same time a district court martial has to try very serious charges, has it not?—As a general rule I think not. If the charge is very grave the general officer remits it to a general court-martial.

1902. With regard to the mode of taking evidence in a court, would you preserve it as it now is?—No.

1903. What alteration would you suggest?—I would not write down a single question.

1904. How would you have the questions recorded?—Judging from the newspapers I do not see the questions written down in a civil court, but I see the answers written down.

1905. But courts-martial are different in this respect; that in the one case you can afford to have a short-hand writer, and in the other it would be found too expensive a process, would you pursue the same system under both circumstances?—Generally speaking, I think that it is unnecessary to put down the questions from the court, or from the prosecutor.

1906. (*Mr. Headlam.*) Are those the formal questions to which you are alluding?—Yes, the formal questions from the court or the prosecutor.

1907. (*Chairman.*) What would you substitute for them?—I would substitute the prisoner's answers. For example, "Have you any person to call for your defence," I would simply write down the prisoner's answer, "I have no one to call in my defence; I do "not wish to cross-examine that witness," what is the use of writing down "Do you wish to cross-"examine that evidence?"?

1908. (*Lt.-Gen. Scarlett.*) You mean that it would shorten the proceedings?—It would shorten the proceedings.

1909. Would you omit any questions put to a witness?—Yes, I would put down the witness's statement without the question.

1910. (*Mr. Headlam.*) You would not in any case put down any single question that was put?—No, I would put it just exactly as I see it in all the legal cases. I do not know whether they are proper reports which I read in the "Times" and elsewhere, but the answer is put down, and we know that that answer is worded by the writer of the report in reference to the lawyer's question.

1911. (*Lt.-Gen. Scarlett.*) But as this court is subject to revision, how would the revising officer in that case know whether those questions had been properly put, and whether the evidence was properly elicited by the questions?—I should think he would gather from the answers whether there had been anything improper asked.

1912. (*Chairman.*) A previous witness has given it as his opinion that for the present system, there might be substituted a statement that all the regular formal questions in the report of the court-martial had been asked and answered, do you think that that would be sufficient?—It would be quite sufficient as to the formal questions; but I consider that the six questions on pages 337 and 338 after conviction might be embodied in one.

1913. (*Mr. Mowbray.*) The questions being all in print, recording the answers takes a very short time, does it not?—Yes. In regimental courts-martial I have not employed the printed forms.

1914. (*Chairman.*) Why is that?—Because it would make the documents so voluminous. I think that anybody who sees the proceedings of a court-martial now will say that the Judge Advocate-General's office must be filled in a very short time. If I had all those separate pages in the regimental courts-martial the books of the regiment would not hold them; consequently I have my regimental courts-martial written out, and for that reason I wish to obviate all those superfluous questions.

1915. But you would ask all the questions, would you not?—I would ask them in one simple form.

1916. For instance, how would you put the questions recorded at page 337? "Are there any previous "convictions against the prisoner? What is his "general character, age, and service?"?—I would put that in one question, and of course in his general character the evidence would be given, "It is good. "He has two good-conduct badges and a medal," or "It is bad," or "indifferent," as the case may be.

1917. Is there any other mode of abbreviating the proceedings of a court-martial which you would recommend?—No.

1918. With regard to the finding of the court and the confirming of it, have you anything to suggest?—No; that has been abbreviated by the lately introduced printed form.

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1919. It has been objected to the proceedings of courts-martial that the highest authority should have the power of ordering a court-martial to reconsider its sentence with a view to a greater punishment. Is it your opinion that it is necessary to retain that power?—I think it is.

1920. Have you known many instances in which it has been exercised?—A few.

1921. Could you state the circumstances under which it has been exercised which you think form a reason for continuing it?—It was exercised a very short time ago in the case of a soldier tried by a district court-martial and convicted of desertion and fraudulent enlistment. The revising officer, the lieutenant-general commanding the district, considered that as the court had lost sight of the fact of the two offences, and had only sentenced the man to the punishment to which they would have sentenced him for a simple act of desertion, sent back the sentence, and on revision they increased the punishment.

1922. Is that the case which was referred to just now by General Lindsay?—No, it is another; it was in my district. Sir George Buller revised the court. The court had lost sight (and I am sorry to say sometimes, in the hurry of their proceedings, they do lose sight) of the gravity of the offence.

1923. (*Capt. Vivian.*) Do you say, advisedly, that in the hurry of their proceedings they lost sight of it, do you think that the proceedings of courts-martial are hurried?—I think that sometimes they do not sufficiently digest the thing in all its bearings; and then it is the duty of the revising officer to tell them them so.

1924. It is a field officer who presides over a district court-martial, is it not?—Not always; you cannot always get them. It is a field officer, or a captain of long standing in the service.

1925. But in the case of a district courts-martial at home it is an exception when you have any but a field officer presiding, is it not?—It so happens that at Parkhurst I have only one major, and it is not deemed expedient always to send a field officer over from Portsmouth to attend a district court-martial. Two or three senior captains of the depôt battalion are generally selected to sit as presidents of the courts-martial in turn with the major.

1926. (*Chairman.*) What length of service is required on the part of a captain to enable him to take the chair at a court-martial?—There is no regulation laid down for it; but no commanding officer appoints a captain unless he is of considerable standing in the service.

1927. (*Capt. Vivian.*) Does it specify in the regulations what the rank of the presiding officer of a district court-martial is to be?—I think it says that he is not to be under the rank of captain.

1928. (*Lt.-Gen. Scarlett.*) Have you any proposal to make for improving the mode of appointing the presidents of courts which is done now by roster; do you think that anything like a permanent court with a permanent president would be a useful institution?—I doubt it.

1929. (*Chairman.*) Do you think it is advisable that the officers of the army should be instructed in the law of courts-martial more than they are at present?—I am disposed to avoid law as much as possible, and to stick to plain sense.

1930. (*Capt. Vivian.*) But in embezzlement cases can you stick to plain sense alone?—There are difficult cases, but I would remit those difficult cases to the civil power. For instance, I would remit cases of embezzlement to the civil power.

1931. (*Chairman.*) What are the powers at present of commanding officers as to the remittance of cases to the civil power?—He is not under any obligation to remit cases unless the offence is committed out of barracks; but I have had cases of theft which I knew I could not have proved, or which at least I believed that I never could have proved before a court-martial, and I have sent them to the civil court, and the civil court have made the case as simple as possible and have convicted the men.

1932. How have you got them before the civil court?—I have informed the chief constable of the county that a robbery has been committed by a soldier in the barracks; he has come up and inquired into it, and he has taken the soldier.

1933. Then you do not require any additional powers to send them before the civil power?—No. It is the custom when an offence of that species is committed within the barracks to try it by court-martial under the Articles of War.

1934. (*Lt.-Gen. Peel.*) Could the civil power refuse to act in such a case?—I apprehend not.

1935. The expense of the prosecution would fall upon the county, would it not?—It would.

1936. (*Mr. Headlam.*) Do you think it easier to conduct such cases before civil tribunals than before military tribunals?—In many cases which have come before me I have said to the inspector of police, "I am sure that is a case I never could have esta-"blished;" and he has said, "Oh! Sir, the case is "quite simple," and the man has gone to Winchester. The man has been in fact tried and convicted by the civil power.

1937. (*Lt.-Gen. Scarlett.*) In case of theft?—Yes.

1938. From a comrade?—It was a complication of offences.

1939. (*Mr. Headlam*). Was he tried by a judge and jury, or was he summarily convicted?—He was tried by a judge and jury.

1940. (*Lt.-Gen. Peel.*) After his sentence is over, does he come back to the regiment?—He does.

1941. Is that sentence recorded against him just the same as that of a court-martial?—Yes, it is provided for by the Articles of War.

1942. (*Capt. Vivian.*) Then you recommend that all cases which are not in direct connexion with military affairs should be transferred to a civil court, such as embezzlement, theft, and things of that kind?—I do.

1943. (*Chairman.*) Is it your opinion that a greater power should be given to commanding officers to refer those cases to the civil power, or that it should be incumbent upon him in all cases to do so?—I think that his discretion should not be limited. He might try them by court-martial, or remit them to the civil power, according to his discretion.

1944. (*Lt.-Gen. Scarlett.*) That is the case now, is it not?—He has the power, but if it is frequently done it is questioned. I believe that it is preferred by the military authorities that a man should be tried by court-martial for an offence committed within barracks.

1945. (*Chairman.*) It does not signify as regards expense by which tribunal the man is tried, inasmuch as the public pays for it whether it is tried by a civil court or by a court-martial?—Exactly.

1946. You are aware that corporal punishment has been done away with in the army?—Yes.

1947. Do you think that it will be necessary to institute any other summary punishment to take the place of corporal punishment?—I do not know of any.

1948. Have you had many corporal punishments at Parkhurst?—No, I am happy to say very few indeed.

1949. How many have you had during the time that you have been there?—About six or seven in the 13 years that I have been there.

1950. (*Lt.-Gen. Peel.*) What kind of cases were they?—Grave cases of insubordination.

1951. (*Chairman.*) What punishment do you consider after corporal punishment to be the one which the soldier dreads the most?—I think he dislikes solitary confinement.

1952. More than shot-drill, for instance?—I think shot-drill is a mistake. It harasses and disgusts the man I admit, but I think that he may do work more profitable to the country and to himself, and I do not see the advantage of disgusting him.

1953. But is it not an object to have some punishment which the soldier feels very severely?—Yes, but there is something so peculiarly irritating in the shot-drill that I have always been adverse to it.

1954. What punishment can you substitute which would be at the same time beneficial to the country, and still be of that penal kind that would tend to prevent crime?—Breaking stones to a much larger extent than they do for repairing all the barrack yards.

1955. Is that thought so very severe a punishment?—It is not the actual punishment, it is the confinement and the restraint which they feel most.

1956. But in a case of insubordination do you think that would be sufficient?—I apprehend that in cases of insubordination in a prison the power of inflicting corporal punishment is not removed. No court-martial has the power of inflicting it, but I apprehend that the powers given to the visitors of a prison are not interfered with by that revised clause of the Mutiny Act. If they are it is a very grave affair.

1957. But do you apprehend that in a military prison it is in the power of any one now to inflict corporal punishment? — Certainly, by a board of visitors, for offences committed within the prison by a prisoner.

1958. Do you think that any of those punishments to which you have just alluded would be dreaded as much by the soldier as corporal punishment?—Corporal punishment was so very seldom inflicted that I doubt very much whether the fear of it had any deterrent effect; it was so exceptional.

1959. Then I understand you to say that you have no suggestions to make with regard to an alteration in military punishment consequent upon the abolition of corporal punishment?—No.

1960. You think that the discipline of the army may be maintained without any such alteration?—I think that the discipline of the army may be maintained, provided commanding officers have authority or encouragement to discharge really bad characters from the army.

1961. You recommend that that power should be given to the commanding officer under what limitations?—I would not give the power to the commanding officer, but I think that the recommendations of the commanding officer should be more listened to than they have hitherto been.

1962. You do not think that that would lead to the commission of crime with a view to getting out of the army?—It might do so in some cases, but a commanding officer can always see that himself and turn the soldier's flank.

1963. But at the same time in a case of that kind it would be advisable to have some very severe punishment, would it not?—There is the power of shutting the man up for two years. It is true that it is a loss to the country, but there is the power.

1964. From your experience what should you say is the feeling of the soldiers of the British Army with regard to the administration of justice in courts-martial?—I think they have every faith in courts-martial.

1965. If the soldiers had their choice, for instance, of the court by which they would be tried, civil or military, which do you think they would prefer?—They would much rather go to the military court.

1966. In your experience have you ever heard of appeals being made to the commanding officer to send men before a civil tribunal?—No, but I have known many instances where a soldier has kicked up a row in Newport, for example, and has been taken up by the police, and that soldier and all his comrades have known perfectly well that he has got nearly three times as much punishment as he would have got if he had been tried by a court-martial.

1967. Have you any other suggestions to make with regard to the practice of courts-martial?—No.

1968. (*Lt.-Gen. Scarlett.*) As one punishment you say you would discharge a man; if you made him lose his previous service he would have to serve so many more years to make up his time; would you make loss of previous service one of the penalties for insubordination with violence?—Yes, but that would require a very special Act in the present day, where the limit of service is defined.

1969. You have lost corporal punishment, and you want a punishment in place of that?—Yes. Do you mean to let a man forfeit his service towards good-conduct pay or towards actual service?

1970. Towards actual service?—I would limit that.

1971. Does it not occur at present that sometimes a man commits a very atrocious act for the purpose of being discharged?—Yes.

1972. (*Chairman.*) It has been suggested that, in all cases of drunkenness, there should be the power of stopping pay. Do you concur in that?—I concur perfectly in the power, without making it compulsory.

1973. Do you think that it would tend either to the stoppage of drunkenness or to the maintenance of discipline in a regiment if all fines imposed for drunkenness were paid over to some fund, from which the other soldiers of the regiment could derive some benefit, either for amusement and recreation, or in some other way?—We have so much money for amusement and recreation now that we do not know what to do with it. I would prefer giving it in charity to the married soldiers.

1974. You think that it would be advisable to apply the fines levied on drunkenness to some regimental purpose?—Yes.

1975. (*Lt.-Gen. Eyre.*) What do you think of appropriating it to providing the means of enabling men to follow trades?—We are following trades as far as we can at the present moment at Parkhurst.

1976. With regard to the increase of the power of the commanding officer. In the navy the commanding officer has the power to award a deserter imprisonment for three calendar months, and any other offender imprisonment for six weeks, or solitary confinement up to 10 days at a time, with an interval of not less than 10 days between the two periods of solitary confinement. Do you know why the military commanding officer should not have that power, with a view of doing away with the courts-martial of which you were speaking in the beginning of your examination?—I do not see why they should not have that power, but I would still give the soldier the right of appeal.

1977. Are you satisfied with the effect of prison discipline upon the soldier?—Yes, I think the prison discipline is very good.

1978. (*Chairman.*) Are you of opinion that a soldier should be allowed to have a friend to assist him with greater powers of defence than he now has?—On general courts-martial I am of opinion that it should be allowed.

1979. Not on district courts-martial or on regimental courts-martial?—The crimes for which a soldier is tried by regimental court-martial are so trivial that I think it would be superfluous If a soldier is brought before me for a crime, and I investigate it, and I think there is any doubt, and that in all probability he would not be convicted, I give him the benefit of that doubt, and I put "Not proved" in the guard report.

1980. In a general court-martial would you allow the friend or adviser of the prisoner to have the power of addressing the court as the prosecutor does?—No, I would let the prisoner read out his own defence as he now does, but I would not have too much meddling.

1981. But is it not fair to give him the same advantage as the prosecutor possesses of addressing the court?—I would make the Judge-Advocate do everything for the prisoner as he does for the defendant. I think that the Judge-Advocate on a court-martial ought to act fairly towards both parties, towards the public and towards the prisoner.

1982. (*Marquis of Hartington.*) Are the soldiers taught or allowed work at any trade in prison?—I believe not.

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1983. Do you think it desirable that they should be allowed to do so?—It depends upon what tools you give them, and upon their characters.

1984. But I believe that, in a civil prison, prisoners are allowed to a certain extent to work at trades, and are in some cases taught trades, are they not?—It would be a very good thing if you could do anything to be of use.

1985. For instance, making mats, or work of that kind?—That might be a question for Mr. Ramsay or the storekeeper at Pimlico.

1986. (*Mr. Whitbread.*) Are you aware that in the naval prisons they manufacture largely?—I believe they do.

1987. (*Lt.-Gen. Eyre.*) As everybody's object now is so much to raise the character of the service, and to attract the better classes into it, would not the system of trades and of encouraging the men in them, and of exempting the good men from certain things when they were able to follow those trades, show all the men out of the army that they would be able to make money in the army?—I think so, certainly.

1988. (*Marquis of Hartington.*) It would to a certain extent, would it not, be an alleviation of the prisoner's condition, if he were allowed to work at a useful trade, and it would make the period of imprisonment less wearisome?—It would make it less harassing, certainly, but I would not make it too pleasant.

1989. But you do not think that it would be so great a disadvantage as to counterbalance the advantages which in many ways would be derived from it?—Of course the country might gain a little money by it; but I think that it is doubtful whether it would be advisable, as I said before, to make the prisoner too comfortable.

1990. But would not the effect upon the prisoner, when he left prison, be a good one, he having learnt something useful?—That is doubtful.

1991. (*Lt.-Gen. Scarlett.*) Looking upon the prison as a reformatory, as well as a punishment, would it not be useful to the men afterwards?—It would be useful to a man when he came out; but it is very questionable whether it would be deterrent to other bad characters.

The witness withdrew.

Adjourned to Thursday next, at 12 o'clock.

Room E., House of Lords.

Thursday, 30th April 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER, C.B.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

Major-Gen. the Hon. J. Lindsay.

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MAJOR-GENERAL THE HONOURABLE JAMES LINDSAY recalled and further examined.

1992. (*Chairman.*) With regard to military punishments, you are aware that under the new Mutiny Act corporal punishment is done away with?—Yes.

1993. Do you think that it will be necessary to substitute any other punishment for it with a view of keeping up proper discipline in the army?—I can hardly say what other punishment can be substituted for it, but I consider the taking away the powers which the authorities formerly possessed to have been a great evil.

1994. You do not think that either in our civil prisons or in some other way we could find a punishment which would be equally efficacious in cases of insubordination to which corporal punishment has been chiefly applied?—I do not think you can.

1995. What do you think is the punishment which the soldier dreads most at the present time, corporal punishment having been done away with?—It is a difficult thing to answer that question, I think, in one answer. There is nothing else but imprisonment with hard labour. Penal servitude is a punishment which as a general rule I do not think conveys much terror; but at any rate it is limited to certain aggravated offences. For the usual crimes which a soldier commits there is no other punishment except imprisonment with hard labour.

1996. (*Lt.-Gen. Scarlett.*) There is solitary confinement, is there not?—I have not found much advantage in solitary confinement.

1997. (*Chairman.*) Which kind of hard labour do you consider to be the severest?—I think that shot drill is the severest.

1998. Do you think that it would be possible to originate a punishment of some other kind which would combine public utility with the enforcement of discipline?—I do not think so. I have thought a great deal about it, and certainly nothing has occurred to my mind which would serve as a substitute as regards the preservation of discipline.

1999. With regard to the punishment for disgraceful conduct, in which are included pilfering and stealing from comrades, do you think that it would answer to refer all those cases to civil tribunals?—Where the crime is in connexion with a civilian, it would naturally come before the civil courts; but my own opinion is still the same: that offences which are committed inside a barrack, even purloining from a comrade or embezzlement inside a barrack, ought to be dealt with by court-martial.

2000. With regard to the punishment of non-commissioned officers, what do you understand to be the rule of punishment at the present moment; must they not be degraded from their rank before any punishment is inflicted upon them upon trial by courts martial?—They must be reduced before any other punishment can be inflicted on them.

2001. Do you think that that is absolutely essential?—Yes.

2002. But do you consider that to be in accordance with the Articles of War?—Certainly.

2003. Can you point out the Article which renders it absolutely necessary to reduce a non-commissioned officer before he is punished?—I think it is laid down in the Queen's Regulations that reduction must precede punishment; but the Article of War merely alludes to that being a punishment which must be inflicted upon a non-commissioned officer. It is not absolutely stated in so many words in the Articles of War that a non-commissioned officer *must* be reduced

to the ranks, but it stands to reason that it is so, and it is the usage and practice of the service.

2004. (*Mr. Whitbread.*) That is to say that Article states (as I read it) that when a non-commissioned officer is reduced to the ranks some further punishment may follow, but it does not order him to be reduced to the ranks; you cannot give him another punishment without reducing him to the ranks?—Certainly not.

2005. That is all that it says, is it not?—I do not think that it even says that; but it stands to reason that you could not sentence a non-commissioned officer to be put into prison without reducing him to the ranks; it would be a monstrous thing.

2006. (*Chairman.*) Do you think it desirable that there should be some punishment for non-commissioned officers without reducing them to the ranks?—I do not think so. I think that a non-commissioned officer ought to be a person who stands so high in the eyes of the men that he should not undergo ordinary punishments. The great object is that a non-commissioned officer should feel himself to be in such a superior position that every exertion on his part is required to maintain it, and that if he loses it he loses all.

2007. But is it not of frequent occurrence in the army that a non-commissioned officer is reduced to the ranks and is subsequently reinstated as a non-commissioned officer by his colonel?—Yes; it frequently happens that a non-commissioned officer is sentenced by court-martial to be reduced to the ranks; in some cases the court-martial has recommended him to mercy, which recommendation the commanding officer has accepted; and in other cases the commanding officer has reinstated the man on parade at the same moment. I have done that myself.

2008. Is it not also a frequent occurrence that a non-commissioned officer reduced to the ranks does his duty as a private soldier for a certain period and then is restored to his rank?—Yes, if he has committed a crime which makes it impossible to keep him as a non-commissioned officer he falls back intot he ranks, and the commanding officer, having regard to his previous character or his previous service, will make him a lance-corporal in a very short time.

2009. Does it not follow from what you have said, that a non-commissioned officer so reduced and so restored, must have lost more weight with the private soldiers than he would do if there was some power of punishing him without reducing him to the ranks?—He has every reason to exert himself to maintain his authority, and I do not think that that weighs with the private soldier a bit?—I think that if the non-commissioned officer is a good one, they know it well, and they are very glad to see him again restored to a position of authority. At No. 1508 of the Queen's Regulations, at page 316, there is a case in point as regards reduction. This is a case which bears collaterally upon the question previously put to me, "Every case of a non-commissioned officer convicted "of any offence by the civil power is to be reported "to the Adjutant-general, with a view to the offender's "reduction to the ranks by the special authority of the "Commander-in-Chief, as it would be contrary to the "usage of the service that a non-commissioned officer "should retain his rank after he has been subjected to "a punishment which would in ordinary cases entail "an entry in the Regimental Defaulter Book."

2010. (*Lt.-Gen. Scarlett.*) That goes to say that if he be a regimental defaulter he ought not to be a non-commissioned officer?—Just so.

2011. (*Lt.-Gen. Peel.*) Will you refer to page 18, No. 332, of the Queen's Regulations, and see whether that does not bear upon the subject?—This bears upon another question which was asked of me: "Officers are to avoid reproving non-commissioned "officers for any irregularity, neglect of duty, or "awkwardness in the presence or hearing of the "privates lest they should weaken their authority "and lessen their self-respect, unless it shall be "necessary for the benefit of example that the reproof "be public or that it shall have been provoked by "repeated neglect or irregularity."

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2012. (*Lt.-Gen. Scarlett.*) Will you read the next regulation to that?—"Non-commissioned officers are "not to be subjected to minor punishments, and when "it is necessary to confine them for any offence they "are to be placed under arrest and not sent as prisoners "to the guard room except in extreme cases when it "is necessary in the interest of the public service to "insure their safe custody."

2013. (*Lt.-Gen. Peel.*) Is not the object of both those regulations to prevent a weakening of the authority of the non-commissioned officers?—Certainly.

2014. (*Chairman.*) I understand that your opinion is that those regulations ought not to be altered?—I do not think so; I think that they are made from the experience of the service.

2015. (*Lt.-Gen. Scarlett.*) Will you read the next regulation, 334?—"Non-commissioned officers are "not to be allowed by resigning their situation to "escape trial by court-martial except by the special "sanction of the Commander-in-Chief." Occasional "instances, however, may occur in which non-com-"missioned officers finding themselves unequal to "perform the duties of their situation apply to be "allowed to resign their rank; a report of every such "case is to be made to the Adjutant-General, and a "certificate of the commanding officer, stating the "cause of the resignation, is to be appended to the "man's record of service."

2016. (*Mr. Mowbray.*) You have read the Queen's Regulation, 1508; that has reference to conviction by civil tribunals, has it not?—Yes; in giving the answer I said that it bore collaterally upon the question.

2017. What punishment by a civil tribunal would in ordinary cases entail an entry in the regimental defaulter book?—Imprisonment and fining.

2018. When a non-commissioned officer is brought before a court-martial do you not consider it proper that the court-martial should exercise its discretion on all the circumstances of the case with a view of awarding an adequate punishment?—I conclude that the functions of a court-martial are limited to trying the charge which is submitted for their decision.

2019. They have to investigate the facts to find guilty or not guilty, and if they find guilty then they have to award a punishment adequate to the offence, have they not?—Yes.

2020. Then they are forbidden to reprimand non-commissioned officers, are they not?—Yes.

2021. And if they award a sentence of imprisonment then they are obliged by the Articles of War, before awarding such sentence of imprisonment, to reduce to the ranks, are they not?—Yes.

2022. Can you give any reason why there should not be an intermediate punishment, something higher than reprimanding, which is forbidden, and something lower than reduction to the ranks followed by imprisonment, which would mark the sense of the Court of the impropriety committed by the non-commissioned officer, and yet not entail upon him the degrading consequences of reduction to the ranks?—The reprimand and other punishments which can be awarded to non-commissioned officers are in the hands of the commanding officer, and if the offence only deserves a reprimand I conceive that it would be much better that that should be given by the commanding officer, and that the man should not be brought to a court-martial at all; because it must always be remembered that the court-martial having once taken place would stand against the man for ever.

2023. But when the commanding officer does not dispose of the case by his own authority, but brings it before a court-martial, he remits that case to the consideration of the court-martial, does he not?—Yes.

2024. Then it becomes a question for them to see what is adequate punishment?—Yes.

2025. Does it necessarily follow that, because a commanding officer at the first blush may have thought that something more than such a punishment as he

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would award was deserved by the offender, the court-martial having inquired more fully into the case should award the higher punishment?—My own opinion is that if it came to that, the court should either reduce the man or acquit him, and not give the minor punishment of reprimand.

2026. I am not now speaking of the minor punishment of reprimand, but of that intermediate punishment between reprimand and reduction to the ranks, followed by imprisonment?—What would you call the intermediate punishment?

2027. Reduction in his own order, as a commissioned officer, may be placed at the bottom of the list of captains.—That is of no use. It carries no punishment at all with it, because we never look at dates in the appointment of non-commissioned officers at all, we pick out the best man. If you want a man to pay a company, or if you want a man to make a staff-serjeant, you may take a man at the bottom of the list, or who is an acting serjeant, and promote him to the first vacancy, and therefore that would carry no punishment at all with it.

2028. But is it not sometimes the case (to take a recent instance of a serjeant instructor of musketry being reduced to serjeant) that the punishment awarded carries with it as a consequence the loss of pay of 10*d.* per day?—That carried a loss of pay, but it was a punishment which the commanding officer could equally have awarded, and such a sentence by court-martial is contrary to the usage of the service.

2029. Then do I understand you to contend that the court-martial should always be absolutely compelled by law to award a punishment higher than that which the commanding officer could have inflicted?—Yes, with regard to non-commissioned officers, I think so; and the reason why I think so is this, that courts-martial upon non-commissioned officers (and I particularly allude to serjeants) ought to be as uncommon as you can make them. And therefore if you made it common that a man could easily be reduced from a staff-serjeant to a serjeant, or placed at the bottom of the list, it would lose its effect upon the rank in general, in my opinion. The serjeant should feel that if he gets drunk or repeatedly drunk, or gets into some discreditable scrape as a non-commissioned officer, he must lose all by it, and that keeps him from doing so.

2030. Are you aware of the classification of the offences which can be tried by civil tribunals?—I cannot say that I am.

2031. Certain cases, for instance, can be tried by justices at petty sessions; other cases of greater magnitude go to quarter sessions; other cases of higher magnitude still are tried by judges at assize. It may so happen that a case which is referred to quarter sessions meets there with a lesser punishment than it might have received if it had been dealt with summarily by the justices at petty sessions; or it may happen that a judge of assize administers a lesser punishment than might have been given at quarter sessions. Can you give any reason why in a military tribunal, if the matter is once referred to a court-martial, that court should necessarily be compelled, whatever may be the circumstances of the case, to award a higher punishment than a commanding officer might have given if they think the minor punishment adequate to the offence?—I give my evidence chiefly upon my own idea of discipline from the effects that I have found from the existing system, and the effects that I should anticipate from an alteration. I can only answer the question in that way.

2032. Your idea is that discipline would be interfered with if it were not absolutely imperative upon the court-martial to award a higher sentence than the commanding officer could give?—Yes, for the reasons I have given.

2033. Do you think it is consistent with their independence, or with the oath which they have taken, to administer justice, that they should administer justice so fettered?—As long as it is contained in the Mutiny Act and Articles of War.

2034. Do you consider that it is so?—Yes, I consider that that is the intention at any rate of the Articles of War, and certainly the usage of the service.

2035. To what Article of War could you refer me as to that?—The 137th Article of War does not state point blank that a non-commissioned officer must be reduced to the ranks by the sentence of a regimental or other court-martial before you can give him any other punishment, I admit, but the inference to be derived from this Article is that the prior punishment which can be awarded to a non-commissioned officer must be reduction; and I hold to that as being the best system.

2036. You are not aware of anything in the Articles of War that makes this lesser sentence illegal?—I am not aware of anything that compels it, but I think it would be a good thing if it did.

2037. Then in fact you desire an alteration in the Articles of War in conformity with what you believe to be the usage of the service?—I do; I think it would work best regimentally.

2038. (*Mr. Headlam.*) With respect to the gravest punishment—suppose that a non-commissioned officer was guilty of desertion to the enemy for instance, and the sentence of the court-martial was that he should be shot—under such circumstances there is no more reason why he should be degraded from his rank previous to the execution of his sentence than with respect to commissioned officers, is there?—There is no doubt of that; but that is going from a very small subject, perhaps, to a very large one. Deserting before the enemy is certainly one of the most serious crimes. In all probability if it was a solitary instance you might perhaps let the man off, but if you had a good number you would certainly shoot him, and then it would entirely depend upon the decision of the Commander-in-Chief.

2039. Supposing such a case, such a crime would undoubtedly render it right that the man should be shot; but under those circumstances there is no reason why he should be reduced to the ranks previous to the execution of the sentence any more than a commissioned officer should be reduced to an inferior grade before a similar punishment was inflicted upon a commissioned officer?—It is not in that case of much importance, certainly, I must confess.

2040. Does it necessarily follow that in every case it is absolutely necessary that a man should be reduced before the sentence was carried out?—It is the rule, and it would not take the Court half a second about it; you had better, I think, stick to form about it.

2041. (*Mr. Mowbray.*) There are other persons subject to the Mutiny Act connected with the army, schoolmasters, for instance, who rank as non-commissioned officers; would you necessarily reduce them to the ranks before you inflicted a punishment upon them?—Yes, I should sentence them all to be reduced and get rid of him. If he is not fit to remain as schoolmaster he had better be got rid of altogether.

2042. But I will assume that a schoolmaster has been inattentive to his duties, and so much so that it is thought right to bring him to trial by court-martial, and the court having investigated the case, think that a degradation in his own rank, which I believe in that case does carry consequences of loss of pay, would sufficiently meet the offence which he has committed—would you necessarily begin by reducing that schoolmaster to the ranks?—A schoolmaster is in a peculiar position. I do not know what to call him exactly; he is a sort of warrant officer, or something of that sort. Though he may be taken out of the ranks he is not necessarily a soldier. There have been civilians who have been appointed schoolmasters; but I think in the case of a man who is not fit to go back as a soldier, I would dismiss him the service.

2043. His legal military position is that of a non-commissioned officer, is it not?—It is. Supposing that man loses his temper in the mess room, and strikes the serjeant-major, he ought to be tried by court-

martial. At present there is no other means of meeting the case except by reduction; but in a case of that sort I do not see why he should not suffer some imprisonment with hard labour and be dismissed the service.

2044. But you are assuming a grave offence, and I am assuming a minor offence?—In the case of a minor offence if he was unfit to continue to instruct (as he would be if he committed himself and got drun and so on,) I think you had better discharge him.

2045. But I am assuming minor offences than drunkenness?—Then the commanding officer sends for him and reprimands him.

2046. But supposing that there is an amount of negligence and inattention which the commanding officer thinks should be investigated by a court-martial, would you necessarily render it obligatory upon the court-martial before awarding any other punishment to reduce that schoolmaster to the rank of a private?—I think that you are assuming the thing which never would occur; but supposing that it was so I would stick to the rule. It is his own fault if he gets into that scrape.

2047. You think that it never would occur?—I think not.

2048. You are not aware that as a matter of fact it has occurred within the last few weeks?—No doubt some curious things do happen occasionally.

2049. (*Lt.-Gen. Peel.*) Admitting that the discretion as to the amount of punishment rests with the court-martial as suggested by the Judge Advocate General, is not that discretion limited to punishments according to the usages of the service?—That is the rule in the army. Courts-martial are sworn to act according to the usage of the service.

2050. (*Chairman.*) Is that part of the oath administered?—It is.

2051. Could you refer to the oath?—It is at page 317 of the Articles of War. "You shall duly "administer justice according to the rules and articles "for the better government of Her Majesty's forces, "and according to an Act now in force for the "punishment of mutiny and desertion, and other "crimes therein mentioned, without partiality, favour, "or affection, and if any doubt shall arise which is "not explained by the said Articles or Act, then "according to your conscience, the best of your "understanding, and the custom of war in the like "cases." I said the usage of the service, which means the same thing as the custom of war.

2052. (*Mr. Mowbray.*) Then you only resort to the custom of the service, when the rules in the Articles of War and the Mutiny Act are deficient?—Yes.

2053. (*Lt.-Gen. Scarlett.*) Does a non-commissioned officer who has been reduced retain the same respect among the men generally, as if he had not been reduced; that is to say, if a man is reduced from a serjeant to be a corporal, would he be as efficient a non-commissioned officer as he would otherwise have been?—I do not think he would.

2054. Would he be as efficient?—I think if you reduced a serjeant to the rank of corporal he would be very open to a certain amount of, I will not exactly say disrespect, but the men would not think so highly of him. I think that he would lose caste more than anything else.

2055. (*Mr. Mowbray.*) That loss of caste would be as much a consequence of the offence that he had committed as the punishment which had followed the offence, would it not?—A man may be tried for what is usually termed a military offence, and he may be put back again and promoted afterwards. If it is a military offence I do not think that the soldiers would think much of the discredit of it. If it is a serious offence then, as you put it, it is a loss of caste from the effect of the crime which he has committed.

2056. (*Mr. Whitbread.*) I understand that you think it would lower a non-commissionedofficer in the opinion of the men if he was reduced in his own grade; but that it would not lower him in the opinion of the men if he was reduced to the ranks by the sentence of a court-martial; and if upon their recommendation and showing of extenuating circumstances, he were thereupon immediately promoted again to the rank of serjeant by his commanding officer?—I think the cases are very different. Supposing that you try a serjeant by a court-martial and reduce him to the ranks, and upon recommendation of mercy, or, by your own will, promote him again, that is consequent upon your feeling obliged to make an example of what you might call a military crime. I do not hesitate to say that if that serjeant is a good serjeant, and has done his duty well, the men themselves would be glad to see him put back again, and that no loss of power would accrue to that serjeant.

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2057. I understood you distinctly to say, in answer to a previous question, that although you admit a regimental court-martial to be a court for the trial of offence superior to the mere decision of the commanding officer, yet you are of opinion that a punishment which it is in the power of a commanding officer to inflict, it should not be in the power of the superior court to inflict?—Yes, I stated that before; I think that a court-martial should not inflict any punishment which it is in the power of the commanding officer to inflict.

2058. (*Chairman.*) In your experience is it a matter of frequent occurrence that the revising officer sends back the finding of a court-martial with a view to inflicting a severer punishment than that awarded by the court-martial?—I think that it is a very rare occurrence indeed, but it does occur occasionally, and I gave an instance the other day in which it had occurred. If I may be allowed to say so with regard to the question of reduction, the opinion of the officers of the army is that this book, the Articles of War and the Mutiny Act, is law, and that if they do not adhere to what is considered here by the habit of the service to be law, they are wrong; and therefore in a case which occurred the other day with regard to a court-martial, when a serjeant was not sentenced to reduction, but sentenced to a punishment which was not recognized in the Articles of War, the proper inference of the commanding officer was that the court-martial had given a punishment which it was not either according to the usage of the service, or within the compass of the Articles of War for them to give. Consequently he revised it, no doubt with the intention that the court-martial should give a severer punishment, namely, reduction, which was according to the usage of the service. The court-martial did not adhere to its finding, but varied the sentence and gave another punishment which was contrary to the usages of the service, and not within the writing of the Articles of War. It has been since stated that the court-martial had been put aside. I may state here that the origin of that was, an application from the commanding officer of the regiment at an early period after the court-martial was over, to know what he was to do; for the commanding officer, using his discretion, had confirmed the finding and disapproved of the sentence. That raised a doubt as to how that court-martial could be booked against the man; he was convicted but not sentenced; and after some consideration the Commander-in-Chief decided that the proceedings of the court were irregular, and that the only thing to do with them was what is usually termed to quash them; and that is the history of justice being said to have been done to the man.

2059. Supposing that a court-martial were to award a sentence of punishment on a non-commissioned officer, and on being ordered to revise their sentence were then to award as a punishment that that non-commissioned officer should be deprived of a post which he held in the regiment as serjeant, but not reduced from a serjeant, do you think that that is also contrary to the regulations of the army?—Certainly contrary to custom.

2060. Would it not be very unadvisable that a court-martial should interfere with the internal regulation of a regiment without the consent of the commanding officer of that regiment?—I think that the

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fewer courts-martial you have the better; they are meant to be severe when you have them if, of course, the case is proved.

2061. (*Marquis of Hartington.*) Does it ever occur that the finding of a court-martial is confirmed by the confirming officer, but that the sentence is not confirmed?—I think it is a very rare occurrence, though I cannot say that it has not happened.

2062. Do you think that it is within the power of a confirming officer to treat the finding and sentence of courts-martial in that manner?—It is in his power, but I think the general officer of the district when the case comes before him, as it does every month, would remark upon it.

2063. (*Mr. Whitbread.*) Is it in accordance with the usages of the service?—It is not according to the habits of the service, or at least I think not.

2064. (*Mr. Mowbray.*) The usual practice in such a case would be to put "confirmed, but the punish-" ment remitted," would it not?—Yes.

2065. There would be two separate acts, first the proceedings would be confirmed, and then there would be an act remitting the punishment?—Not in a case where the punishment is an improper one according to the usages of the service, because you would not remit, and I should not confirm.

2066. (*Mr. Headlam.*) It was not at all an uncommon thing, was it, when corporal punishment was awarded and also imprisonment, for the confirming officer to confirm the proceedings, but to remit the corporal punishment? — Certainly, but that is a different question. You may remit any part of the sentence if the sentence is correct.

2067. And that is not an uncommon thing?—It is a common thing. I have frequently done it.

2068. But when any portion of the punishment is illegal and not warranted by the Mutiny Act, then, under those circumstances, the proper action of the revising officer would be not to confirm the sentence?—Certainly.

2069. What is the power of a commanding officer with reference to the reduction of non-commissioned officers summarily?—It rests with the Commander-in-Chief and with the colonel of the regiment.

2070. With the colonel of the regiment, subject to the approval of the Commander-in-Chief? — No; the colonel of the regiment can do it on his own responsibility.

2071. That is not the lieutenant-colonel commanding, but the colonel of the regiment?—The colonel of the regiment.

2072. Is not that inconvenient in some cases?—I think that it is useless. For instance, the colonel of a regiment, supposing his regiment is in the East Indies knows nothing of his regiment, and the Commander-in-Chief would be a better man to do it than the colonel, I should think.

2073. Do you know how it is in the Marines?—I do not know.

2074. Would you make any alteration then with respect to the colonel of the regiment being the person who has the authority to summarily degrade a non-commissioned officer?—I would. I would take it away from the colonel, because it cannot work evenly. Troops are quartered all over the world, but I think that it should be in the power of the representative of the Commander-in-Chief in the colonies, that is to say, the lieutenant-general commanding abroad.

2075. (*Chairman.*) But is it the fact that if a regiment is quartered in India and you wished to reduce a non-commissioned officer you must send home to the full colonel?—I cannot answer that question. India is different; it has its own government and Commander-in-Chief, and everything of that sort, but it would be so in Canada.

2076. (*Mr. Whitbread.*) According to the plan which you have proposed, that regimental courts-martial should never inflict a sentence which is not a severer one than the commanding officer of the regiment has power to inflict, might it not very often arise that when a case came to trial the court-martial would find such extenuating circumstances that they would think the punishment which they were obliged to inflict far too severe, and they would have no alternative, although the offence might be distinctly proved, but either to acquit the man or else to inflict a sentence which in their opinion was far too severe for the offence?—If a sergeant commits a crime, my own opinion is that if he is convicted he ought to be reduced. I apprehend that a court-martial should not sentence a man to be confined to barracks.

2077. You think that they should never sentence a man to anything unless it was severer than anything which the commanding officer had power to inflict?—Yes, if he were convicted; but it is always in the power of the court-martial to recommend a man to mercy, and to state why they do so; and also, as I stated in my evidence on Monday last, I would give a man an appeal to a higher court.

2078. But although they might recommend him to mercy, the commanding officer might not attend to that recommendation, and the result would be that a much severer sentence would be inflicted upon the man than the court thought adequate to the offence?—It possibly might be so. At the same time the man might appeal to a higher court.

2079. Is there any appeal now?—There is an appeal to a general court-martial, and I think that that is too much. I think that the appeal should be to a district court-martial, as I stated in my evidence last Monday.

2080. (*Chairman.*) Seeing that considerable doubts have arisen in courts-martial upon this point, do you not think that it would be advisable to have a scale of military punishments by courts-martial named in the same way as in the case of punishments by civil tribunals?—I know nothing about the civil scale of punishments, but I think that the removal of all doubts would be very advisable indeed. I also think that a scale is a very good thing by way of giving a maximum. Not having thought of a scale for punishments by court-martial I see some little difficulty about it, but still I think that that might be overcome, and something which might keep courts-martial tolerably even would be useful.

2081. (*Mr. Headlam.*) Would it not be a matter of exceeding difficulty, inasmuch as many of the crimes committed vary completely according to circumstances?—There is considerable difficulty in that, because there are several circumstances. Character forms a very important element; if a man is brought before you, we will say for an act of disobedience, or perhaps habitual drunkenness, character would weigh, and therefore it does make it a matter of extreme difficulty.

2082. But, taking for instance the crime of desertion, that may be nearly the highest crime which a man could commit, if committed in the face of the enemy, and if he goes over to the enemy immediately before an action, under those circumstances it might be quite right that a man should be shot, but in another case the crime of desertion might be of very trifling moment, might it not?—I quite understand that; I think that offences in the field ought to be classed in a different category, or you might almost say in a different chapter of the Articles of War from the ordinary offences which soldiers commit in time of peace and in quarters. A man might desert to the enemy, and if the man was the best character in the world then you would treat him just the same as if he was the worst.

2083. Is it not the case that the crime of sleeping on his post is a crime for which a man may be subject to death?—In the field he would be sentenced to death, and if it was an important place he would be executed, no doubt; and that is the reason why sleeping on the post is still left in the category of offences to be tried by a general court-martial. I think that offences before the enemy should come under the head of general courts-martial, and several offences which now come under general courts-martial in time of peace

should be removed and put under district courts-martial.

2084. (*Chairman.*) But if you named the scale of punishments, could not the discretion remain the same as it does in the civil courts, that whereas in the civil courts you hear of one man picking a pocket being sentenced to one month's imprisonment, and of another committing the same crime and being sentenced to seven years' penal servitude; might not the same discretion be left in courts-martial, provided the punishments that could be inflicted were known?—Certainly, and if it were possible I should even be inclined to go further. I think that courts-martial vary in their sentences so very much from want of some guide that if you could give them a guide it would be a very good thing.

2085. (*Mr. Mowbray.*) All that the law can do is to prescribe a maximum?—All that the law can do is to prescribe a maximum.

2086. And then the maximum being prescribed it must be left to the court to apportion the sentence to the circumstances of the offence, only taking care that it be smaller than the maximum?—Yes.

2087. (*Lt.-Gen. Eyre.*) As a general rule is not that done by the Articles of War?—It is done as to imprisonment; it is done by order.

2088. (*Marquis of Hartington.*) You were asked some questions, both the last time that you were examined and to-day, with reference to the power of revision of the finding and sentence of a court-martial by the commanding officer, and I understand you to have said that you do not think it would be desirable that that power should be relaxed, but you appeared in your answer to allude chiefly to the power of revision of a sentence; do you think it necessary that the confirming officer should retain the power of sending back the finding for revision?—Yes, I think that he should retain the power.

2089. For what reason?—I have known instances where a man has been found guilty, and it appeared to the revising officer that there was not sufficient evidence to convict him. He pointed it out to the court in a memorandum, and ordered the court to reconsider their finding, thinking it better that that should be done rather than that he should overrule the court. He explained in what way the evidence fell short, and the court-martial then acquitted the man. I know an instance the other way, in which the revising officer considered that the evidence was sufficient to find the man guilty, and he pointed out where the different parts of the evidence bore upon each other, and upon that the court convicted the man. I know two instances of that sort, and I think that the great object is not to get the man off, or to convict him; the great object is that the men in a battalion should be perfectly convinced that justice is done to them, not merely justice in getting them off, but also justice in convicting them if it is necessary.

2090. But do you think that it promotes the interest of justice or of discipline that a court should be summoned to reconsider its finding when that finding has has been a finding of acquittal, such order to reconsider necessarily, though indirectly, meaning a direction on the part of the commanding officer to find the man guilty?—The revising officer never does a thing of that sort without fully explaining why he does it. That is read out to the men in square; the men know everything which occurs in the room in which that court-martial is held, and I have known instances in which men have been acquitted to the regret of the men.

2091. Do you not think that the fact of sending back a verdict of acquittal for revision does convey to a certain extent the direction of the officer of the court composed of officers subordinate to himself to find that man guilty?—I do not think so. It is the knowledge derived from experience and age giving advice to a body of men who are sitting in judgment. It is pointed out and reasons are given, and it is my belief that if those reasons are not satisfactory to the minds of the officers, they are as sure as I am sitting here to stand by their original verdict, and "respectfully" (which is the usual phraseology) "adhere to their former finding."

2092. (*Mr. Whitbread.*) Does that tend to promote discipline?—You asked me that question the other day, and I can only give you the same answer; that I do not think that it hurts discipline at all. Everything is above board.

2093. (*Marquis of Hartington.*) But do you not think that there is a distinction between giving the confirming officer the power of sending back a sentence for revision and of sending back a finding?—There is a difference, but the object is the same. The object is that full justice should be accorded, and that if there is any failure in justice from the decision of the court there should be the opportunity of revising it. The Court may take the opinion of the revising officer or not, just as they please. I never knew any evil come of it, and I never knew in my experience, either from those above me or from officers commanding regiments, that the court was in any way lessened in the opinion of the confirming authority for doing their duty as long as they adhere to the rules and customs of the service.

2094. Would it not be a very similar case to a judge directing a jury to go back and reconsider their verdict?—I do not myself think the two cases are analogous.

2095. (*Mr. Whitbread.*) In all those cases where corporal punishment can be inflicted under the Act of last year, have you not the power of inflicting penal servitude?—You have the power if they are tried by general court-martial, but not if they are tried by other courts-martial. There are only two cases in which corporal punishment under last year's rule was inflicted. My own recollection is that a general court-martial can sentence to penal servitude for anything, but I do not know whether it is so now.

2096. In military prisons what are the severe punishments that are applied as part of the sentence?—Hard labour, which consists of shot drill and performing various laborious duties in the inside of the prison, and occasionally, in places like Aldershot and Portland, working in fortifications and works.

2097. Are you well acquainted with the military prisons?—Yes.

2098. Do you think that the discipline in military prisons under a sentence of hard labour is as severe as in a large civil prison under a civil sentence?—I have no experience of civil prisons.

2099. You have no crank in use in military prisons?—No.

2100. You have no treadwheel in use in military prisons?—No.

2101. And almost your only form of hard labour, excepting shot drill, is that of general service in the prison for cooking and so on?—There are other duties, and picking oakum is one of them.

2102. But you have no really severe muscular labour, except shot drill, I think?—That is the only severe muscular labour.

2103. (*Chairman.*) What is the practice with a prisoner who has been acquitted by a general court-martial and awaits the confirming of the sentence?—The practice after general courts-martial is bad. The time which elapses between the sentence of the court and the approbation of the sentence, or the reverse, is very often a month, five weeks, or six weeks, and sometimes longer.

2104. And during the whole of that time where is the prisoner kept?—He is kept in the lock-up room; that is to say, a room which is off the guard room

2105. Is that after sentence of acquittal?—It is very rare that a sentence of acquittal takes place, in consequence of the crimes being, as you may say, common crimes and no importance, and I think if you were to ask the Judge Advocate-General he could give you a better answer than I could. It may appear an extraordinary thing that I have no experience of an acquittal. I have very little experience of general

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courts-martial at all; that is to say, they are very rare where I have have been most, in Canada, except for desertion, which is a simple act in itself, and which requires no trouble whatever to prove; and therefore I cannot say that I have any experience of acquittals.

2106. Can you suggest to the Commission any mode of disposal of a prisoner who has been acquitted between the sentence and the confirmation of it?—Yes, I think that there ought to be two or three lock-up rooms attached to a guard room, in which he might be confined after the decision of the court, so that he should not be placed in the same room into which you turn every night a certain quantity of drunkards and absent men.

2107. Would any inconvenience arise from the soldier being allowed a certain degree of liberty who has been acquitted, provided that you can recover him in case of the sentence not being confirmed?—I am afraid that there would. You must remember that if it is a case of a bad character he is sure to be trying to escape.

2108. (*Mr. Whitbread.*) If he is acquitted by the Court?—But he does not know that he is acquitted.

2109. (*Chairman.*) Another witness has spoken very strongly upon this point, and says that it is a great grievance?—It is.

2110. When a man has been acquitted, would there be any great objection to his being allowed a considerable amount of liberty, provided that you could get possession of him again in case a sentence of the court is not confirmed?—I think there would be an objection, because the acquitted man might be a man of bad character, and for some days he could not know that he was acquitted, if he did, that it was confirmed.

2111. At the same time he being kept in prison, is it not a punishment for an offence which he has not committed?—It is so, but that I apprehend is the case in the same sort of way in all criminal practice, namely, that people who are acquitted have been kept some time in confinement beforehand, though in this case it may be a few days after.

2112. Is it invariably the case that when a man has been convicted the time that he suffers imprisonment between the conviction and the confirmation of the sentence is considered in the length of the sentence?—Yes, the sentence dates from the signature of the president of the court-martial.

2113. (*Mr. Mowbray.*) With respect to cases of acquittal, are you aware that the practice is that as soon as the proceedings reach the Judge Advocate-General's office it is his duty immediately to consider the proceedings and to forward them to Her Majesty, with a view to Her Majesty confirming the acquittal, if he advises Her Majesty so to do, without delay?—I believe that to be the practice on acquittal.

2114. As a matter of fact, if the proceedings of a general court-martial in which a prisoner is acquitted are received at the Judge Advocate-General's office in the morning they are usually transmitted to Her Majesty on the evening of the same day?—I understand that to be the case.

2115. (*Lt.-Gen. Eyre.*) Although you object to have the man released on acquittal from his place of imprisonment of arrest, would you object to his being released from his close imprisonment to mere confinement at the barracks?—I do not see how it is possible to do it, because, until the court-martial comes back, nobody knows anything about it, except that the evidence of previous convictions is not given.

2116. I believe it is done in some continental armies, in Prussia for example?—I do not see any great objection to it.

2117. (*Chairman.*) Have you any suggestions to make with regard to the punishment of habitual drunkenness?—Yes, I think a great evil is going on in the army now with respect to that crime. The system is to try a man for habitual drunkenness the fourth time he gets drunk. No doubt it is perfectly right that he should be severely punished for constant repetition of drunkenness, but the effect at the present moment is to fill the prisons and to make prison common; and it is my opinion that when prison becomes common it loses its effect in the eyes of men, both as a punishment and as a disgrace. I am a great advocate for giving commanding officers (as I said in my evidence before) more power, and instituting what exists so far in the civil courts, the power of a magistrate or authority under the Articles of War and the Mutiny Act, for the purpose of fining men (of course it must be limited and not exceeding so much a day), and further, for giving the man the right of appeal to a court-martial if he does not think he is justly treated in being fined.

2118. But you are aware that that Article has originated in the irregularity and variety of the sentences for drunkenness in the different regiments?—You asked me just now about a scale of punishments. I am an advocate for a scale. I think that it works well. A maximum might be given, and no doubt a commanding officer who understands his business thoroughly and knows his men well can very easily do justice to them, increasing the punishment to a man of bad character and reducing it to a man of good character, and so on; but as commanding officers change very much, I think a scale which regulates punishments to a great extent might be introduced with advantage, giving a maximum.

2119. With regard to the application of stoppages for drunkenness, to what would you apply them?—My own opinion is that they should go to the benefit of the army.

2120. Of the army generally?—Of the army generally, and not to the benefit of a regiment. I think it would be very bad policy and a great evil, and it might be liable to suspicion if you were to give a commanding officer the power of appropriating the money so stopped to the benefit of his men, or to the benefit of any society attached to his regiment, or anything of that sort. I think it should go into the hands of the Secretary of State to improve the condition of the men, either by increasing the rewards or otherwise appropriating it for their general benefit, but not regimentally.

2121. Would you place no limit to regulate the submission of the case to a court-martial?—Yes, I would name a limit.

2122. What limit would you name?—I would double the present limit at least, and make it the eighth time.

2123. (*Lt.-Gen. Eyre.*) Would you even at the eighth time make it compulsory, or would you leave it still to the discretion of the commanding officer?—I should be rather for making it compulsory. I would give him plenty of law, and then make it compulsory.

2124. For every case of habitual drunkenness after that?—No, I would start afresh.

2125. (*Lt.-Gen. Peel.*) What is the punishment now for 24 hours' absence without leave?—The commanding officer has power to stop pay to the amount of five days, and there are other punishments which he has the power to award.

2126. Is it compulsory to try that man by court-martial if it has happened four or five times?—It is not compulsory, but as a rule it is done.

2127. Then as regards a man who has been drunk three times, the fourth time it would be far better for him to be absent for 24 hours and be subject to the punishment for being absent without leave, rather than to be subject to trial by court-martial for getting drunk?—No doubt, and it often happens that men when they get drunk remain absent for that reason.

2128. Therefore the present rule leads to men absenting themselves from their regiment?—It does.

2129. (*Marquis of Hartington.*) You mentioned just now that you had a great objection to common imprisonment?—Yes, to filling prisons.

2130. Do you think that a soldier usually comes out a worse soldier after a sentence of imprisonment?—No, I do not think he does. He is worse in this way, that he has lost the fear of going into prison.

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The great fear of young soldiers is getting into prison, but having been once there, however much they dislike it while there, yet the fear of going back again does not sufficiently prevent the commission of crime.

2131. You would wish that it should not be too easy to get into prison?—I would wish that courts-martial for slight offences should be uncommon.

2132. But you do not think that the character of a soldier is so much injured by his being subject to the punishment of imprisonment that you would desire to get rid of any man who had undergone a sentence of imprisonment?—Certainly not, because he goes into a military prison where what little association he has is with other soldiers. I think it is a very bad thing to put soldiers into civil prisons as a rule.

2133. (*Lt.-Gen. Eyre.*) You do not think that the light character of the prison discipline is the cause of this?—I am told that one military prison varies very much from another; that one is considered severe and the other is not.

2134. Is not that unfortunate?—Yes, I think it is.

2135. (*Marquis of Hartington.*) Is the discipline of a prison generally considered to be light in the army?—My experience is not so. I am sure it was not so in the case of the prison I had at Montreal. It was very severe there, and the men did not like going into it.

2136. (*Mr. Whitbread.*) Is not the scale of diet in military prisons rather higher than in civil prisons?—I cannot answer that question.

2137. (*Lt.-Gen. Scarlett.*) What were the punishments in the prison at Montreal?—They were the same as in other prisons, but they were very severely carried out. We had a very severe chief warder, and as far as my experience goes, I think it depends upon the severity of the chief warder.

2138. Could you suggest any other punishments in prison than those we have, that of piling shot, solitary confinement, flogging if the visitors ordered it, and work in the fatigue ward?—I cannot suggest any others. I do not think that the treadmill would be better than shot drill.

2139. (*Lt.-Gen. Eyre.*) Do you think the living is too good?—Yes, I think generally speaking the living is too good. I think they are fed rather high.

2140. (*Mr. Headlam.*) I am afraid practically they are not very much afraid of imprisonment?—I am afraid not; but of course when it is common it loses its severity in the eyes of the men.

2141. If the punishments were generally shorter and more severe, that is the living made worse and the punishment sharper during the time they had it, do you think it would be more effective?—I am disposed to think it would.

2142. (*Lt.-Gen. Scarlett.*) Do you think long imprisonments are any advantage?—I do not think so.

2143. (*Mr. Whitbread.*) In fact you can hardly carry a very long sentence through in a military prison without a certain relaxation of the severity of the discipline, can you?—I fancy that is the case. Though I do not like long sentences, of course it is perfectly necessary that there must be some long sentences in order to have an effect upon the minds of the men, not upon the men themselves who are going into prison, but upon the minds of those who hear the court-martial read.

The witness withdrew.

Viscount Walden.

VISCOUNT WALDEN called in and examined.

2144. (*Chairman.*) Will you state the post in the army that you held last?—I was captain and lieutenant-colonel in the Guards and colonel in the army.

2145. In which regiment?—In the Grenadier Guards.

2146. During the course of your service were you called upon to take part in courts-martial?—I was for five years Assistant Adjutant-General, which is a duty which requires a knowledge of military law.

2147. During the course of your experience in that post did any circumstances occur to lead you to believe that any alterations were required in the military law of this country, or in the practice of courts-martial?—I think that regimental courts-martial might be made a little more independent; and indeed I think that all courts-martial might be made so.

2148. Do you think that their decisions should not be subject to revision in the same way that they are now?—Not their decision; their finding or their sentence.

2149. You would not allow the revising officer to send back the finding of a court?—Not if it was a mere finding, and as long as the finding was legal.

2150. Have you known any dissatisfaction to arise from the practice as it now exists?—I do not know what exists now; but formerly I do not think a regimental court-martial or any other court-martial could be called an independent court in the sense of a civil court.

2151. But would your Lordship recommend that it should be freed altogether from revision?—From all revision which affected the opinion of the court with regard to the guilt of the prisoner, and with regard to the punishment as long as it was according to law. I should give the revising authority power to revise for irregularity of procedure or irregularity of sentence, or for a finding which was contrary to the evidence as appearing in the proceedings, very much as a judge does in a civil court with a jury; and supposing they gave an illegal sentence, or an irregular sentence, or a sentence they had not the power to give, then of course the revising authority should have the power to revise.

2152. (*Marquis of Hartington.*) Would you deprive the confirming officer of the power of confirming, or of approving or disapproving, or of altering a sentence?—No.

2153. It would be on his responsibility?—It would be on his responsibility.

2154. Would you disapprove of his power of sending back the finding or sentence to the court itself for revision?—Yes; unless it is irregular.

2155. I understand that what you object to is a power which exists of sending back the finding or sentence to the court itself for revision?—Yes; unless it is irregular or illegal. Supposing the finding is contrary to the evidence as it stands upon the proceedings of the court, for instance, then I should revise the court and point out to them that they had come to a finding that was contrary to the evidence before them.

2156. But you would not deprive the confirming officer of the power of confirming or disapproving the finding, or of altering or remitting the sentence?—He might alter it so long as it was remission or mitigation, but he should not increase the sentence. I should like to see courts-martial perfectly independent as courts so far as the finding and the sentence are concerned, so long as the finding and the sentence are regular and according to law.

2157. (*Lt.-Gen. Scarlett.*) Then of what power would you deprive the revising officer?—I should deprive the revising officer of the power of calling upon a court to revise its finding, unless the finding was fairly contrary to the evidence. I presume the courts-martial, which are sworn to try according to the evidence, will acquit or convict a man to the best of their belief, as they are upon oath. The commanding officer is not upon oath, and he calls upon them to alter that which they have already done upon oath.

2158. That is to say, if there was nothing contrary to evidence you would let the finding stand?—I would let the finding stand in that case.

2159. (*Chairman.*) You would not, I presume, deprive the confirming officer of the power of mitigating the punishment?—Certainly not.

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2160. (*Mr. Mowbray.*) You would have a maximum punishment prescribed, I presume, which the court could not exceed?—As it is now there is a certain maximum in the Articles of War.

2161. But you would not also have a minimum prescribed; that is to say, that they should be bound to give not less than such a punishment?—I should keep them within the terms of the Articles of War for the time being.

2162. (*Lt.-Gen. Scarlett.*) Did you ever know an instance of an officer revising a court when the finding was according to the evidence of a court?—I have known several instances where an officer has revised a court who had acquitted a man, and that court presumedly were guided by the evidence.

2163. Then we must conclude that the revising officer disagreed with the court as to the strength of the evidence?—Yes; but what I mean is, that they may have refused to admit certain evidence, or that they may have admitted evidence that they ought not to have admitted.

2164. (*Mr. Headlam.*) Supposing that, upon revision, the confirming officer is clearly of opinion that the man ought to have been acquitted, and that the evidence in the case is not strong enough to convict him, but he has been convicted; under those circumstances would you give the revising officer the power of sending it back for the court to consider the evidence with a view to an acquittal?—I would.

2165. We will suppose, on the contrary, that on a perusal of the evidence, the confirming officer is really of opinion that the evidence is sufficient to have justified a conviction, but the court have acquitted the man; under those circumstances you would not allow the revising officer to send it back in order that the court might reconsider the evidence?—No; I should give the benefit to the prisoner, as in the case of a jury acquitting a man.

2166. With respect to punishments; supposing that the court have inflicted a punishment more severe than the revising officer thinks right, you would leave it to the revising officer to remit a portion of that punishment?—Yes.

2167. Supposing on the other hand a court had imposed a punishment decidedly less than the commanding officer thinks right; under those circumstances you would give the prisoner the benefit?—Yes, I should let it stand,

2168. (*Lt.-Gen. Peel.*) Provided it were not contrary to the custom of war?—Yes; nothing must be contrary to the custom of war.

2169. (*Mr. Whitbread.*) Do you advise that alteration on the ground that it would strengthen confidence in the administration of courts generally in the army, or upon what ground do you recommend it?—I do not think it would be detrimental to it, but that it would be beneficial.

2170. In short you would allow the revising officer the same power which now exists in the highest authority in criminal cases to mitigate a sentence; but you would not in any case allow him to revise in a sense antagonistic or hostile to the prisoner?—Certainly not.

2171. (*Chairman.*) Did you form any opinion during your experience on the present scale of punishments in the army which may be inflicted by courts-martial or by commanding officers under the Mutiny Act, and have you any suggestions to make with regard to them?—No, I think they were very fair altogether. I think the most important punishment has been done away with.

2172. Now that corporal punishment has been done away with, is it your opinion that there are any existing punishments in the army which are sufficiently stringent to make up for the loss of corporal punishment?—Certainly not.

2173. Can you suggest any other punishment that you think would be equally effective?—I know nothing as an ultimate resource, as a basis of punishment, unless you inflict death.

2174. You do not think that any amount of penal servitude can be inflicted which would have the same effect as corporal punishment in checking crime in the army?—Not in checking sudden outbursts of crime, such as mutiny, or insubordination on the part of a regiment or of a detachment on the line of march.

2175. What do you understand to be the severest punishment now existing (corporal punishment being done away with) that a commanding officer on the line of march can inflict in the case of insubordination?—There is literally no summary punishment that he can inflict.

2176. Have you known any instances in your experience where it has been necessary to inflict corporal punishment immediately on the spot by a drum head court-martial?—I have not known such a case personally, but I remember a case of a man upon whom that punishment was inflicted on the line of march near Hampton, who refused to march or to move.

2177. Supposing a soldier was to refuse to march now, what is the power that a commanding officer has?—Now he has none, except he makes a prisoner of him by main force and puts him into a cart.

2178. And your Lordship says that you cannot suggest any other punishment?—I cannot, or rather I cannot suggest the dread of any other punishment, for it is the dread that keeps the men up to the discipline in those cases. For instance the men might fall out of the ranks and go into public houses and get drunk on the line of march and refuse to come out, and you could not prevent them.

2179. But you would have the power of sending a picket of soldiers and bringing them out still, I suppose?—Yes, you might bring them out; but with the dread of this punishment I think they would come out quicker.

2180. (*Mr. Headlam.*) What would be the practice in such a case in the Continental armies?—I fancy it could hardly arise there. If a man showed anything like mutiny to his superior officer he would be liable to be shot.

2181. (*Chairman.*) Have you had much experience of foreign armies?—Not beyond having been with the French army in the Crimea, and I have lived a good deal in Prussia with the Prussian army.

2182. Could you give the Commission any information with regard to the punishments inflicted in those armies?—I cannot; I have not thought over it for some time.

2183. (*Marquis of Hartington.*) Is it your impression that in the Crimea the punishment of death was more frequent in the French army than in the English army?—We had no case of the punishment of death in the English army for a military offence, and I do not remember a case of a man being shot in the Crimea in the French army.

2184. (*Lt.-Gen. Eyre.*) Are you acquainted with the French practice?—I am.

2185. Are you aware that in the ten years up to 1855, including that year, 134 men were executed?—I can believe it to be so from what I know generally.

2186. And that 1,596 men were awarded that sentence?—I know that the discipline of the French army in that respect is much more severe than that of the English army.

2187. On the other hand are you aware that in the Prussian army in the last ten years there have been only two cases?—I was not aware of it; but I can understand it. The nature of the armies is very different.

2188. (*Mr. Whitbread.*) Is it your opinion that a man who has previously borne a good character is likely to break out into any of those serious crimes without any previous warning?—I think not.

2189. They would be confined to very bad characters, probably?—I should not call them bad characters, because they are often your best soldiers, but they are very violent men.

2190. But is it desirable to keep such men as that in your ranks?—I think so, most certainly. I think that they make your best soldiers.

2191. You said some time ago that you were desirous of making the regimental courts-martial more independent tribunals. We had evidence from a previous witness that it was not uncommon that the officers composing a regimental court-martial were censured in private by their commanding officer for not having come to such a decision as this commanding officer thought was right; is it in your experience that that happened?—Censured is perhaps a strong expression.

2192. Are you aware that they have been found fault with?—I think it is quite possible that the court might have been assembled and have had it pointed out by the revising authority that they had made some mistake or other; "wigged" is the military expression.

2193. Is it your experience that that happens?—I think it might happen under certain commanding officers.

2194. And do you not think that that is detrimental to the independence of the court?—I think so certainly.

2195. And that it ought not to be persevered in?—I do not think that that could happen if the courts were made independent.

2196. (*Chairman.*) But at the same time is it not advisable that the commanding officer should have the power of advising young officers as to their conduct generally as members of courts-martial?—I think he should have the power of instructing them.

2197. Provided he does not blame them or reprimand them for any thing they have done as members of the court?—As long as it is a matter of opinion, I should only let the revising authority find fault where they had acted contrary to law, or contrary to the evidence, or contrary to regulation.

2198. It has been stated in evidence here that there is a practice in some regiments of the commanding officer of the regiment doing what is termed "wigging" his officers in the orderly room for their conduct as members of a court-martial; are you aware of any such practice?—I think it is quite possible under certain commanding officers.

2199. But you think that that is a very objectionable practice?—Certainly; most objectionable.

2200. At the same time would you deprive the commanding officer of a regiment of the power of animadverting upon the conduct of his officers as members of a court, and of advising them as to any steps which they have taken, provided it is not in the nature of a reprimand?—As long as it is mere instruction it might, I think, be done.

2201. (*Lt.-Gen. Eyre.*) And for that object may it not be very necessary for him to speak to them and to point out what he thinks important features in any case?—Certainly, as long as it is instruction only. I think officers on a court-martial are very sensitive on this point; the oath that they take is very solemn, and they are sworn to do their duty, and they do not like to be accused afterwards of not having acted conscientiously and according to their oath.

2202. Previous witnesses have laid great stress upon a court of officers being addressed privately by the commanding officer; might not that be done with the best intentions and with the best consequences, instead of giving them what perhaps they would call a "wigging" more publicly?—Yes, I think it might. If I might suggest one thing with regard to courts-martial I think it would be a very good plan if the revising authority had the power of laying down the law to the court.

2203. (*Chairman.*) But how could that be?—Upon matters of procedure.

2204. But the revising authority may be a distant general?—But I mean when the proceedings are brought up to him for confirmation or otherwise. For instance, supposing the sentence is illegal and the revising authority considers it to be illegal, that ought to be final with the court; the court ought not to have an opinion upon that, but they ought to be guided by his opinion as to the legality or illegality of the sentence, or as to the reception or otherwise of evidence, or as to procedure.

2205. (*Mr. Headlam.*) Is not that the case at present? Suppose a court should have come to a conclusion upon improper evidence, is it not the duty of the revising officer to state that they have received evidence improperly, and under those circumstances not to confirm the proceeding?—I should make the court alter the sentence if it was an illegal sentence, and not allow them to have the power to pass it.

2206. (*Lt.-Gen. Peel.*) Then in some instances you would restrict the power of the revising officer, and in others you would give him a greater power?—I would give him the greatest power with regard to regulating the proceedings, so that they should be all according to law; but I should restrict his power of interfering with their proceedings. At present the court may still adhere to their illegal sentence.

2207. Could they adhere to it if it was contrary to law?—I think so; the revising officer does not confirm it, but the court adhere to their sentence and the prisoner escapes. But it is not only with regard to the sentence, but with regard to all the procedure. Numbers of little points come up, whether such and such a witness shall be sworn or not, and whether such evidence shall be taken or not.

2208. (*Mr. Headlam.*) It would be better if there was some one like the Deputy Judge Advocate who attended district courts-martial, because the confirming officer could not be in attendance at the trial?—Upon those two great points of the finding and the sentence when the proceedings come to him.

2209. But he could not rule as to procedure after it was over?—He could send the proceedings back, and when he revised them he might tell the court that such and such a sentence was contrary to law, and that they could not pass it.

2210. (*Chairman.*) Do you think that it would tend to better procedure in courts-martial if it was obligatory on a certain portion of the officers of every regiment to study military law to a greater extent than they now do?—I certainly think so; and I think that it would be a good plan to have a digest of military law for the use of officers.

2211. And that every officer should be passed in that digest?—Yes, and that very young officers should not be allowed to sit at all upon courts-martial.

2212. I believe it is the practice in the French and Prussian armies that a certain class of officers in every regiment have to pass through a very severe examination in military law?—I believe it is so in the Prussian army, but I am not aware whether that is so in the French army.

2213. (*Lt.-Gen. Peel.*) Is there not now a purely professional examination before an officer gets promotion from one rank to another?—In the regiment there is.

2214. Would you suggest to add to that an examination in a certain portion of martial law?—I would, but I would make the examination much more severe than it is.

2215. (*Chairman.*) You think that a certain class of officers should be passed through a severer examination in military law than is now the practice?—Yes, and I do not think that ensigns ought to sit upon courts-martial at all as members, or at all events not until after a certain number of years' service.

2216. The present practice is that in six months they may sit upon courts-martial, is it not?—They may do so, and vote as ensigns on courts, and then I think they are examined for their lieutenancies upon military law, having exercised the power all the time before.

2217. (*Lt.-Gen. Eyre.*) Then you would propose regimental courts-martial to be composed of a higher class of officers?—I would. I would have them fewer in number, and either lieutenants or captains.

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2218. (*Marquis of Hartington.*) Do you think that the Articles of War and the Mutiny Act are generally understood among officers in the army?—I do not know whether they are understood, but I do not think that they are much read. I think that they read more the Queen's Regulations.

2219. (*Mr. Mowbray.*) They are not very easy to understand, are they?—I think they require a considerable amount of study.

2220. (*Lt.-Gen. Eyre.*) Do you not think that it would be very desirable to simplify them if possible?—I think so, certainly. I should like to suggest also that serjeants should not be tried by any court-martial less than a district court-martial.

2221. (*Chairman.*) Would you apply that to all non-commissioned officers?—I would leave corporals as they are at present.

2222. (*Marquis of Hartington.*) For what reason would you suggest that change?—Because I think that a serjeant is intermediate between the rank and file and the officers of the army. You only try an officer by a general court-martial; it is a more solemn and independent court, independent of the commanding officer.

2223. (*Lt.-Gen. Eyre.*) You would do that to give them greater importance?—To give them greater importance. The president of the court is a man higher in rank, and I think that it would tend to raise the non-commissioned officers themselves in their own estimation.

2224. (*Marquis of Hartington.*) Have you ever sat upon a general court-martial?—Yes, frequently.

2225. On an officer?—I do not think I have.

2226. Do you think that the mode of procedure on a general court-martial is satisfactory, or would you suggest any alterations?—I think that the way of taking the evidence is very lengthy, writing down all the questions and answers. I think that a *vivâ voce* examination would be better.

2227. Do you think, from your knowledge of the feeling of officers in the army, that there only exists confidence in the justice which is administered by a general court-martial held on an officer?—Yes, I think so. I, myself, should not be the least doubtful if I was tried by a general court-martial that I should receive justice in my own case. But I should like to see all courts-martial made more independent of the convening authorities.

2228. (*Mr. Whitbread.*) Where a court-martial has power to inflict a mrximum sentence, do you not think that it would be advisable to include in that maximum sentence the infliction of any lesser sentence?—With regard to imprisonment, I think so.

2229. And with regard to all other sentences?—That would involve a case like that of a reduction of an officer, or the reduction of a non-commissioned officer. I do not think that it would be advisable in the case of a non-commissioned officer.

2230. For what reason?—I do not see what you could reduce him to.

2231. Supposing that he was a staff serjeant, could you not reduce him to the position of a serjeant?—That can be done already by the commanding officer.

2232. But referring solely to courts-martial?—I do not see any practical objection to it, but I do not see what good would it do, because a commanding officer can do it already, and can send him when so reduced to be tried.

2233. Supposing that a commanding officer thinks that the offence is one which deserves reduction to the ranks, but that a court-martial upon investigating the case are of opinion that an adequate punishment would be to reduce the staff-serjeant to the rank of serjeant; do you not think that it should be competent to that court to award him the sentence which they think adequate to the case, it being a lesser sentence than that which they are empowered by the Act to award?—I think that in principle it is good, but I do not see what you would gain practically by it, because the commanding officer could do it.

2234. But the commanding officer having referred it to a court-martial, and the court-martial not being of the opinion of the commanding officer, how would the matter stand then?—I see no practical objection to that.

2235. (*Mr. Mowbray.*) It is a punishment which the commanding officer cannot inflict, if the court-martial can do it there can be nothing in the nature of the punishment itself inconsistent with the custom of the service?—I think not.

2236. The custom of the service may or may not be understood to prescribe that it shall be done by such and such authority; but in the nature of the punishment itself there is nothing inconsistent with discipline?—I do not think you can reduce a serjeant to the rank of corporal. If a staff officer was tried by court-martial you could not take away his staff appointment by the sentence of the court-martial.

2237. That is your view of the law as it exists; but you admit, as I understand, that a commanding officer can reduce a staff-serjeant to a serjeant?—Yes.

2238. Then if the commanding officer can do that, it cannot be inconsistent with the discipline of the service; that is to say, it cannot be objectionable as diminishing the authority of the non-commissioned officers with the privates of the regiment?—I do not think that it does. I see no practical objection to what I consider to be the law now, or to what it used to be.

2239. Assuming that the law at present does not admit of it, you think it desirable that the change should be introduced?—It might not be objectionable, but I will not say that it is desirable, because, as I said before, I do not know what you can reduce a man to except in cases of staff appointments.

2240. (*Mr. Headlam.*) Would you see any advantage that would be gained by it?—I do not see any advantage in it, except in the case which has just been put, where the court had only one of two courses to pursue, one being to reduce the man to the ranks, which virtually ruins him, and the other to acquit him. In that case I think there would be an advantage.

2241. (*Mr. Mowbray.*) To acquit him would be on the part of the court to make a finding contrary to the oath they have taken?—It would. On the other hand the commanding officer would not call in the assistance of a court-martial.

2242. But the commanding officer having called in the assistance of a court-martial it becomes the duty of that court to award such sentence as they think the facts of the case demand and the dicipline of the service will justify?—Certainly.

2243. (*Lt.-Gen. Scarlett.*) Would such action on the part of a court-martial be in accordance with the usages and customs of war as at present instituted?—I never knew of such a case in my experience. It is certainly contrary to the customs of war.

The witness withdrew.

Col. C. R. Egerton.

Colonel Caledon Richard Egerton recalled and further examined.

2244. (*Chairman.*) You now put in some additional correspondence with regard to the courts-martial in the Grenadier Guards?—Yes; I put in correspondence which had not passed through the authorities at the Horse Guards. On the previous occasion I put in everything which had come into the hands of the authorities at the Horse Guards, but this correspondence which has passed between the commanding officer of the Guards and Colonel Sturt has since been received.

2245. (*Lt.-Gen. Peel.*) In fact, it is regimental correspondence?—Yes, it is regimental correspondence.

2246. (*Chairman.*) Not correspondence which necessarily comes to the Horse Guards?—No

2247. You fill the post of Deputy Adjutant-General to the Forces, do you not?—I do.

2248. What military post had you filled previously?—My last military appointment was Assistant Adjutant-General at Edinburgh.

2249. What regimental rank have you held?—I have commanded a depôt battalion for about nine years. I was 25 years in the 89th regiment.

2250. To what rank did you rise in the regiment?—To be lieutenant-colonel.

2251. Then of course you have had considerable experience in those posts with regard to courts-martial?—I have.

2252. Knowing the object of this Commission, have you any suggestion to make as to the constitution of courts-martial or their practice?—I have not; I think the present system works very well, and does justice to the prisoner as well as to the discipline of the service.

2253. Since you have been at the Horse Guards have you received any complaints which lead you to believe that there is dissatisfaction in the army with the present system?—No; there are failures in some courts-martial. We have had some cases lately which have been found fault with.

2254. So far as you can judge, have those failures arisen from a misunderstanding on the part of the court, or from a defect in the law?—From a misunderstanding on the part of the court of the law and practice of the service.

2255. Have those failures been serious?—I cannot say that they have been serious. There was a serious case from Canada the other day which I could mention, in which a private soldier was tried for shooting a comrade, and sentenced to penal servitude, from which the man was obliged to be released, the sentence being illegal.

2256. In what way was it illegal?—It was illegal because a general court-martial could not award penal servitude for shooting a comrade, but they could for shooting a non-commissioned officer. It would then come under the head of insubordination.

2257. Is there no military law at present by which you can try a man for shooting his comrade?—There is no capital charge on which you can try him; he should be tried by the civil power. The man shot at was a private.

2258. (*Lt.-Gen. Scarlett.*) Was the man killed?—No; he was wounded in the thigh.

2259. (*Chairman.*) Supposing that man had been killed, would there have been no military power of punishing him?—No; he must have been handed over to the civil power.

2260. It is not the first time that a case of that kind has occurred, I presume?—I do not remember a case of the kind.

2261. Supposing that a regiment was in a part of the globe where they had no power of submitting a prisoner to a civil tribunal; how would such a case be treated?—That is specially provided for, I think, in the Mutiny Act. In India, when they are 100 miles from any of the Presidencies, they may try civil offences by court-martial.

2262. But there are remote parts of Canada where regiments are quartered, and where they have not the facility of sending a prisoner before a civil tribunal?—I do not think that that Article applies to Canada.

2263. Are there any other offences committed in the army which cannot be adequately punished by courts-martial?—I do not know of any.

2264. Would you suggest that there should be general power in courts-martial to inflict adequate punishment upon any offence, however heinous, which can be committed in the army?—I think that it would be more desirable that that description of offence should be handed over to the civil power.

2265. Supposing a soldier shoots his officer, he may then be tried by court-martial and sentenced to death?—He may.

2266. What difference can there be as regards crime between shooting one man and another?—The one case involves insubordination, and the other does not. It is a thing that so very rarely happens that I should think it is hardly worth providing for.

2267. Have you any suggestions to make with regard to punishments of non-commissioned officers?—I should like to see the power of reducing a serjeant-major or a quartermaster-serjeant to the rank of serjeant given to a commanding officer, with a right of appeal to a court-martial.

2268. (*Lt.-Gen. Eyre.*) Do you mean reduction to the ranks?—Merely to the rank of serjeant.

2269. (*Chairman.*) Would you carry that farther?—I would not carry it farther. I think it would be very detrimental to the service in many respects to reduce a serjeant to the rank of corporal. The rank of corporal is the nursery for the non-commissioned officers of the army, and it would have a very bad effect on discipline to turn it into a *solatium* for reduced serjeants. It would prevent the promotion of lance corporals, and the bringing forward of young men.

2270. You would still retain the necessity of reducing a serjeant to the ranks before he can be punished?—I would.

2271. (*Marquis of Hartington.*) You heard the evidence given by Lord Walden just now, did you not?—I did.

2272. Then you disagree with him that it would not be objectionable to allow a court-martial the power of reducing a staff-serjeant to the rank of serjeant or to the rank of corporal?—With respect to a serjeant-major or to a quartermaster-serjeant, I may point out that they are the only two staff-serjeants that hold *bonâ fide* rank carrying pension, and it requires a court-martial to reduce them, and it can now only reduce them to the ranks. There is a difference between a rank and an appointment; an instructor of musketry is merely an appointment made by the commanding officer; it is a particular duty that a serjeant is put to perform, receiving extra-duty pay. Now a serjeant-major or a quartermaster-serjeant is a rank, and he can only be reduced by a court-martial, and as these men are always selected for long service and high character, I think it would be well to reserve an authority to reduce them to the rank of serjeant only, instead of being obliged to reduce them to the ranks.

2273. But in no other case?—In no other case.

2274. Is it not possible that injustice might be done in such a case as was put by Mr. Whitbread just now, and which I understand to be this: a staff-serjeant has committed some offence in the opinion of his commanding officer, the adequate punishment for which would be reduction to the ranks; he, therefore, has him tried by a court-martial. In the opinion of the court-martial, although the man has committed an offence, it is not of so grave a character as to warrant his reduction to the ranks; if you do not allow the court-martial to inflict an intermediate sentence, you place them under the necessity, either of acquitting the man, which, consistently with the evidence, they cannot do, or of awarding a sentence heavier than they consider adequate?—No; a court-martial is bound to sentence a man according to the nature and degree of his offence; but if there are any extenuating circumstances in the case, or if the man is of very good character, it is open to them to recommend him to mercy in a separate letter to the confirming officer; and I have never known such a recommendation, when there has been any ground for it, not acceded to by the confirming officer.

2275. But what objection do you see to giving the court the power of awarding the sentence, and precisely the sentence, which they consider to be the adequate one?—Because it prejudices discipline and throws discredit upon the commanding officer. It would go forth in the regiment that the commanding officer had brought a man to trial unnecessarily; but a commanding officer would not bring a man to trial unnecessarily. We generally find that if a serjeant is brought to trial it is not the first time that

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he has committed himself, unless the offence is very serious.

2276. (*Mr. Mowbray.*) Do you consider it necessary that the court should pass a sentence greater than the facts of the offence warrant in order to sustain the authority of the commanding officer?—The commanding officer would not bring a non-commissioned officer to trial except for an offence for which, if he was convicted, he ought to be reduced.

2277. Does your argument then rest upon the supposition that commanding officers are infallible?—I do not at all say so, but still commanding officers are generally men of some experience and of some judgment.

2278. (*Mr Whitbread.*) Would it not be equally prejudicial to discipline if they sent in a recommendation to mercy, and the commanding officer had to do exactly what they would have done; that is to say, pass after all the intermediate sentence?—No.

2279. For what reason?—Because justice has been done. The court have sentenced the man to the punishment which is commensurate with his offence, and they leave the power of mercy in the hands of the commanding officer.

2280. The court having sentenced the man, you think that justice is done because the court-martial has sentenced a man to a punishment which they think is unjust, and they ask the commanding officer to mitigate it?—No; they do not think it unjust, but they think that the non-commissioned officer has a good character, or that there are extenuating circumstances. They find him guilty of an offence for which he is tried; he would not be tried for that offence unless it was an offence for which he ought to be reduced. If there are mitigating circumstances those are for the confirming officer to consider. The court in a separate letter would recommend the man to mercy, or would point out any mitigating circumstances which appeared upon the face of the proceedings, and the commanding officer would take them into consideration.

2281. But supposing that a commanding officer did not attend to this recommendation to mercy, then the sentence would be that which the court who tried the prisoner would consider too severe, and therefore an unjust sentence?—It could not be too severe or unjust if it was commensurate with the nature and degree of the offence.

2282. But the court being of opinion that it was not commensurate with the nature and degree of the offence?—There are certain offences which are referred to in the Mutiny Act, and are committed by soldiers. The Mutiny Act to a certain extent, and the custom of the service also to a certain extent, prescribe a certain amount of punishment in those cases, which a court is bound to accede to; but if there are, as I said before, extenuating circumstances, they bring those to the notice of the commanding officer, and he exercises his discretion, either by diminishing the punishment or not as he thinks right; but so far as my experience goes commanding officers are always too glad to have the opportunity of releasing a non-commissioned officer who has done his duty and who has claims to such consideration; and I have rarely known any such cases in which the recommendation of a court has not been acceded to.

2283. If a court is empowered to sentence a man to imprisonment for any length of time as a maximum, it is empowered also to sentence him to any lesser period than that, is it not?—I will illustrate it by an example; supposing that a man is tried for desertion, a district court-martial may sentence that man to imprisonment to any extent; but the Queen's Regulations recommend that the time should be limited to six months. About 56 days is considered by the practice of the service the minimum amount of imprisonment for the crime of desertion, and a court-martial would not be justified in sentencing a prisoner convicted of desertion to less.

2284. If they found extenuating circumstances, would it not be in their power to sentence him to less than that?—It would not be considered the proper sentence. Any extenuating circumstances should be brought to the notice of the confirming officer, and it rests with him to diminish the sentence further beyond that certain quota which is considered commensurate with the magnitude of the crime.

2285. Would it be an illegal sentence if they passed a sentence of less than 56 days?—I am not prepared to say that it would be illegal, but it would be contrary to the oath taken by the members of the court that they would sentence the man according to the nature of the offence and according to the custom of war in like cases.

2286. (*Mr. Mowbray.*) Each case must depend upon the facts, must it not?—Desertion is a fact, and a very serious one, and should be punished accordingly.

2287. If there is a maximum of imprisonment, say for two years, you may legally imprison a man for any period short of two years, say for one hour, if one hour is considered to be the proper time to meet the offence?—I am not competent to say what is legal, or not.

2288. (*Mr. Headlam.*) I take your view to be that courts-martial should have the power of degrading a non-commissioned officer to be a private?—Certainly.

2289. But that they should not have the power of degrading him in his own rank?—Certainly not. The 137th Article of War says that a non-commissioned officer may be reduced to the ranks, but it does not say that he may be reduced to any other rank.

2290. And you approve of that state of the law?—Yes. In the case of an officer the Article of War says that he may be placed at the bottom of the list.

2291. There is no power to degrade a lieutenant to the rank of ensign, is there?—There is no power to degrade a lieutenant to the rank of ensign, or a captain to the rank of lieutenant.

2292. And you do not see any reason why it should be desirable that there should be such a power?—I do not.

2293. (*Lt.-Gen. Scarlett.*) Can a commanding officer reduce a regimental serjeant-major to be a serjeant at present?—He cannot.

2294. For inefficiency?—No; a troop serjeant-major or a colour-serjeant may be reduced to the rank of serjeant by a commanding officer, but not a regimental serjeant-major.

2295. A man may become inefficient without any fault of his own, such as from accident; what course would you take if he became inefficient?—You could not try him by court-martial for inefficiency.

2296. You could not try him by court-martial for some defect of memory, or anything of that kind?—No; he may resign, and often does so.

2297. But have you not the power of removing him for inefficiency?—No.

2298. By the power of the colonel of the regiment, or by the power of the Commander-in-Chief it may be done, may it not?—Yes; the full colonel of the regiment can do it; but not the commanding officer.

2299. But you can do that without a court-martial?—Yes.

2300. And that is the course generally taken with a man who is inefficient without any crime of his own?—Yes.

2301. Would you give a man a right of appeal to a court-martial if it was proposed to reduce him in that way?—No, not in cases of summary reduction by the Commander-in-Chief, but I would give a serjeant-major a right of appeal to a court-martial if reduced as I have proposed to the rank of serjeant by order of his commanding officer, because his rank carries pension, and a man should not be reduced so as to affect his pay and pension, unless in very special cases by superior authority, without a right of appeal to a court-martial.

2302. But for any crime beyond that to which reprimand or advice or admonition would apply, you would bring a non-commissioned officer to a court-martial?—Yes.

2303. And that court-martial would be bound to reduce him ?—It would be bound to reduce him.

2304. And you would not allow the court-martial to reduce him to any lower rank than that which he held, that is to any inferior non-commissioned officer's rank ?—Not a serjeant.

2305. Can you give any reason for not allowing that ?—I think the serjeants would not otherwise be sufficiently careful of retaining their position. I also think that when a man has arrived at the rank of serjeant and loses his position by committing himself, he ought to begin again, and that other men should have the opportunity of being brought forward.

2306. You think that he would not be so efficient after a reduction to a lower grade as he was before ?—I think that he would not be so efficient.

2307. He would not be so much respected by the men of his company ?—Certainly not.

2308. (*Chairman.*) From your experience do you believe that the existing punishments in the army are sufficient to check the crimes for which corporal punishment was formerly inflicted ?—I think that the existing punishments are sufficient to punish the individual, but that they are quite inefficient as regards the deterrent effect upon others.

2309. Can you suggest to the Commission any substitute which you think will be equally effective with corporal punishment ?—I cannot; I think that the punishment of imprisonment should be made more severe.

2310. (*Lt.-Gen. Scarlett.*) For insubordination with violence, would you invariably inflict forfeiture of service both for pay, pension, and towards discharge ?—I would not for a solitary instance. It would depend upon the man's character, but for a repeated act of it I would.

2311. Would you place it in the power of a court-martial according to circumstances to inflict it ?—I apprehend that a general court-martial has that power.

2312. (*Chairman.*) You heard the evidence which was given by the last witness; do you agree with him that it would be advisable that there should be some stricter examination in military law enforced in the army amongst officers ?—Yes, I think there would be an advantage in that. Officers are now examined, perhaps once a week or once a fortnight, by the commanding officer in the Articles of War and the Queen's Regulations and the practice of courts-martial, and the young officers attend every court-martial for instruction for six months after they join.

2313. But does it happen in every district that there are a sufficient number of courts-martial to give the officers that instruction in six months ?—Yes, I am sorry to say that there are; I always made the young officers write out the whole proceedings, and go into the next room when the court closed, and deliberate as if they were on the court, and write down their sentence, and then have it examined by the major, who would point out all the errors and bring them to me the next day.

2314. Do you believe that to be a common practice in the regiments in the army ?—I have reason to think that it is so in the depôt batallions; but I do not think it is usual in the army generally to make them go through the whole thing in that way.

2315. Do you not think that it would be an improvement upon the present system if that was enforced upon every regiment in the service ?—I think it would.

2316. (*Lt.-Gen. Eyre.*) Do you not think that sitting on courts-martial is the most important duty that young officers have to perform ?—It is by far their most important and most responsible duty.

2317. (*Lt.-Gen. Scarlett.*) What do you consider to be the chief failings of our courts-martial, taking first the regimental court-martial ?—I think, as a rule, substantial justice is done.

2318. Could you propose any mode in which a regimental court-martial could be better conducted than it is at present ?—I should like it to be made the duty of the president of a regimental court-martial to sum up the proceedings regularly as the Judge Advocate would do, and to point out beforehand what Articles of War applied to the case and what punishment could be carried out. I think most of the old captains do that; but I do not think that that is a general rule.

2319. But you would make that imperative upon them ?—I would make it imperative that they should regularly go through the proceedings, and sum up, and point out the bearings of the Articles of War upon the case.

2320. (*Lt.-Gen. Eyre.*) Would you have that recorded ?—I would.

2321. (*Lt.-Gen. Scarlett.*) Do you think that the number of courts-martial which sometimes take place on one day are injurious to the proceedings, and that they render men careless, as for instance when there are three courts-martial in one day with the same president and the same court ?—I do not think that they have that effect. Now they have printed forms, they get through them very quickly.

2322. In a district court-martial is there anything which you could improve upon ?—I would let the president of a district court-martial sum up in the same way as I would recommend that the president of a regimental court-martial should do.

2323. Would you appoint any one to defend the prisoner, or would you allow him any one to attend the court and assist him in private ?—I should have no objection to his having a friend or an officer of his company to advise him. I think that it would be very desirable so long as it was a military friend.

2324. Where there is a failure in general courts-martial, from what cause do you think it usually arises, so far as you have had experience of it ?—I have not known many cases of failure in general courts-martial. There are intricate cases in which commanding officers are as much involved almost as the officers whom they try. and in some of those cases there have been great difficulties; but as regards private soldiers and non-commissioned officers, I think it is a very rare thing that there is any failure.

2325. (*Lt.-Gen. Eyre.*) With respect to drunkenness, which is such a serious subject with us, do you consider that habitual drunkards are fit men to be retained as soldiers ?—I should be very glad to see them discharged; but it is no use discharging men unless they are marked. I would discharge any man who it could be certified could not re-enlist.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Room E., House of Lords.

Monday, 4th May 1868.

PRESENT:

COLONEL THE RIGHT HONOURABLE JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER, C.B.
CAPTAIN THE HON. J. C. W. VIVIAN.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

Major-Gen. the Right Hon. Sir H. K. Storks, G.C.B., &c.

4 May 1868.

MAJOR-GENERAL THE RIGHT HON. SIR HENRY K. STORKS, G.C.B., G.C.M.G., called in and examined.

2326. (*Chairman.*) In the course of your military experience I believe you have had very good opportunities of judging of the constitution and practice of courts-martial?—I think I have.

2327. Taking general courts-martial first, have you any suggestions to offer to the Commission with regard to the constitution of a general court-martial?—No. I think the change which has been made in the Mutiny Act this year, in reducing the number of the members and laying it down that no officer should serve on a general court-martial until he has been three years in the service, a great improvement.

2328. You would not carry that farther with regard to the limitation of officers?—No.

2329. (*Capt. Vivian.*) The number is nine now, I think?—It is nine in England.

2330. (*Chairman.*) The Jamaica courts-martial were composed of seven, I believe?—Yes.

2331. But that was in consequence of the difficulty of obtaining a larger court in that locality, was it not?—It was.

2332. Was that court-martial which was sent to Jamaica constituted on the spot, or was the whole court sent from England?—The whole court, I think, was sent from England.

2333. Do you think that it is advisable to alter the present practice with regard to officers sitting on courts-martial, according to which no officer can sit on a court-martial until six months after he has joined his regiment?—I think that it should be laid down that no officer should be allowed to sit on a court-martial until it is ascertained that he is thoroughly equal to perform the duties which he is called upon to discharge as a member of a court-martial.

2334. An examination of officers I believe takes place now?—Yes.

2335. Do you think that it would be advisable to carry that examination farther?—I do not, if the examination is properly carried out.

2336. We hear that in some foreign armies there is a class of officers in every regiment who have been directed to turn their attention more exclusively than other officers to military law; that is not so, I believe, in the British army?—It is not.

2337. Do you think that it would tend to the better constitution of courts-martial if there were in every regiment a certain number of officers whose duty it was to pay greater attention to military law?—I do not think it would.

2338. By whom is the examination as to fitness carried on now?—The examination as to fitness is carried on before an officer is promoted. He has to pass an examination by a board which is appointed to examine him on his regimental duties generally, and amongst other things questions are asked him about the practice of courts-martial; but in almost every regiment the commanding officer himself or one of the field officers examines officers periodically as to the general nature of their duties. He has the young officers in the mess room and examines them as to their information and as to their knowledge of their duty in general, and of courts-martial amongst other things.

2339. But has the colonel of a regiment in appointing a regimental court-martial any choice of the officers of which that court shall be constituted?—They are taken from a roster which is kept.

2340. Does it not follow from that that an officer, whether he can pass his examination or not, must take his turn on the roster?—No, because he is never put on that roster until he is considered qualified from having sat as a supernumerary member of a court-martial, and also from the examination which he has passed. As a commanding officer I should never put an officer as a member of a court-martial until I was thoroughly satisfied that he could do his duty.

2341. (*Lt.-Gen. Peel.*) Do you not hold that the commanding officer is responsible for the fitness of an officer to serve on a court-martial?—I hold a commanding officer responsible for everything which takes place in his regiment.

2342. (*Chairman.*) Has it ever been within your knowledge that young officers have not been able to fit themselves by a sufficient knowledge of military law to sit on a court-martial?—I cannot say that it has ever come to my knowledge that an officer has not been fit.

2343. Evidence has been given here to the effect that it would be desirable to alter the mode in which the finding of the court is given, commencing with the junior officer. Do you approve of the present practice in that respect?—I think that it would be very desirable to change that.

2344. How would you suggest that the finding should be given?—I would suggest that every officer should give his opinioni n writing in a folded paper handed by him to the president of the court.

2345. More than one witness has recommended that the opinion should be taken from flanks to centre; you would not recommend that?—No.

2346. (*Lt.-Gen. Scarlett.*) Would you state your objection to the usual way of declaring the findings; why you would wish to have them written?—I would prefer having them written because I think that there is an opinion out of doors that junior officers might be influenced probably by the opinion of the senior officers. Another reason for wishing to see the existing system changed is that I have cause to think that a miscarriage of justice takes place occasionally from the junior officers giving their opinion first.

2347. (*Chairman.*) Could you say in what direction that miscarriage takes place; does it lead to a great number of acquittals of prisoners, or the reverse?—Yes, I think it leads to acquittals against the evidence, judging from the evidence which is recorded.

2348. Do you think it is advisable that in a court-martial the president should be obliged to sum up the evidence as is done in a civil court?—I have generally as president of a district court-martial, and also of a regimental court-martial, summed up as it were; that is to say, I have read the charge, and I have gone over the evidence, and have then asked the members of the court to deliver their opinions, beginning at the junior, as to whether in their opinion the prisoner was guilty or not guilty.

2349. (*Capt. Vivian.*) That is not compulsory, is it?—That is not compulsory. I have specially guarded myself against expressing any opinion of my own, or influencing in any way the opinion of any other officer, but I have only called the attention of the court to the charge and what has been alleged in support of it, and what is alleged for the prisoner's defence.

2350. (*Marquis of Hartington.*) When a Deputy Judge Advocate is present it would not be necessary for the president to do that, would it?—Not at all under existing regulations.

2351. That is his duty?—That is his duty; but the Deputy Judge Advocate only acts in general court-martials.

2352. You said, I think, that in summing up the evidence you carefully avoided expressing any opinion of your own; is it in your opinion necessary that in this summing up of the evidence you should avoid pointing out in what way particular evidence bore for or against a prisoner, or in what it was contradicted by other evidence?—I think it is important to point it out to the court.

2353. Do you see any reason why the president in a regimental court-martial or a district court-martial, or the Deputy Judge Advocate in a general court-martial, should not sum up the evidence in precisely the same way as a judge does to a jury?—I do not see any reason why he should not.

2354. (*Lt.-Gen. Eyre.*) Would you extend the practice of having Deputy Judge Advocates, whose duties are now limited to general courts-martial, to district courts-martial?—I would not. I do not think that they are necessary.

2355. (*Mr. Mowbray.*) Do you think it desirable that the proceedings of a district court-martial should be sent to the Deputy Judge Advocate of the district before they are confirmed by the general officer?—We have only Deputy Judge Advocates in England, and I have never seen the working of the system in England.

2356. Do you not think that it might be advisable to have those proceedings considered before confirmation?—Yes, I think that it would be.

2357. Is there not at present, if any difficulty arises, a want of a person trained in military law as an adviser?—I think so. There are cases in which the Judge Advocate-General, when a district court-martial is sent to England, differs as to the finding, or even as to the charge on which the prisoner has been arraigned, and he advises and directs that the proceedings should be quashed, and that the prisoner should return to his duty.

2358. At present the proceedings are confirmed by the general of the district, and are then transmitted to the Judge Advocate-General's office, are they not?—Yes.

2359. At the Judge Advocate-General's office the proceedings are all perused, and it sometimes happens that a Judge Advocate-General has to advise that the proceedings, which have been confirmed, should be set aside, whereas if the opinion of the Deputy Judge Advocate had been taken first that would not have occurred; is not that so?—Yes; I have a case in my recollection where the proceedings were quashed, and the prisoner, who was a non-commissioned officer, and who had been reduced to the ranks, was by direction of the Judge Advocate-General reinstated. That was on a question of law as regarded the charge on which the prisoner was tried.

2360. Sometimes the miscarriage arises from the improper reception of evidence, does it not?—It does.

2361. (*Chairman.*) In those cases as to which you have just spoken, has the prisoner been put to any expense in the investigation which has taken place?—I do not know of any pecuniary expense having been involved; but very often a court-martial has been set aside by the Judge Advocate-General, and the man has gone through a term of imprisonment. I have known such cases.

2362. (*Mr. Mowbray.*) And under the previous state of the law he might have been flogged?—Under the previous state of the law he might have been flogged.

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2363. (*Lt.-Gen. Scarlett.*) Would it not create very considerable delay to forward all courts-martial to the Judge Advocate-General before they are confirmed?—Certainly, unless it were the practice at every foreign station to have an officer specially trained who would be Deputy Judge Advocate, like the officers who are employed in this country at present.

2364. (*Chairman.*) Are there many instances in regimental courts-martial in which the charge has been found to be defective?—There are cases occasionally which I have known.

2365. To whom in a regiment is intrusted with the duty of drawing out the charge against the prisoner?—The commanding officer, it is done under his authority; it is done by the adjutant, but the commanding officer approves it, and it is his act.

2366. Is it invariably so?—Every charge is approved by the commanding officer of the regiment. A charge may be submitted by a captain of a company, but the commanding officer approves of the charge and it is virtually his charge.

2367. (*Lt.-Gen. Scarlett.*) In the case of a general court-martial I think all charges are sent to the Judge Advocate-General before the man is tried, are they not?—Not abroad, but they may be at home.

2368. (*Chairman.*) But in a regimental court-martial does the person who makes the charge invariably appear to substantiate the charge?—He is generally the principal evidence, so to say.

2369. Then does he address the court?—Certainly not; I never knew any address to the court in a regimental court-martial.

2370. Would he be allowed to address the court as the prosecutor?—I suppose there would be no objection to it, but I never saw a prosecutor address the court in a regimental court-martial. There is the adjutant there to watch the proceedings.

2371. Is it the duty of the adjutant merely to watch the proceedings in a regimental court-martial?—He acts as prosecutor. He is not put in the orders as prosecutor, but he attends there to watch the proceedings, and if the president of the court requires anything, he sends for the adjutant.

2372. (*Capt. Vivian.*) But does not the officer preferring the charge act as prosecutor?—No, because it might be a non-commissioned officer. The way in which charges are preferred against soldiers generally is this: a man is brought into barracks for being drunk and absent, he is put into the guard room and a charge is brought and put into the guard report; that charge is taken to the captain of the company the next morning, who signs it. When the prisoners in the guard room are brought before the commanding officer in the orderly room he takes the guard report, and there he has the charge which is made against the prisoner. He examines the witnesses who are brought up to support the charge, and then he decides whether he will give the man a minor punishment or whether the man shall be tried by a court-martial; if the man is to be tried by a court-martial he is taken back to the guard room, and then the charge is regularly drawn out according to the forms given in the appendix to the Queen's Regulations.

2373. (*Chairman.*) How does the president of a court-martial take possession of the charge; is it laid before him?—It is laid before him at the court.

2374. And he reads it to the court?—He reads it to the court.

2375. And in your opinion neither the adjutant nor any other officer has the power of addressing the court in relation to that charge?—It is not the practice, but I do not say that he has not the power.

2376. One of the witnesses before this Commission has stated that sometimes the adjutant has had the power of addressing the court, and has done so, his own evidence having formed a part of the case. What

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would be your opinion of such a proceeding?—I should think that it would be a very improper proceeding.

2377. And it should not be allowed?—It should not be allowed.

2378. (*Lt.-Gen. Scarlett.*) Are not the cases generally before a regimental court-martial so simple that they require no address from any one?—Certainly.

2379. The charges are simply laid before the president, the witnesses are called, they state what they have to say upon the charge, and the evidence is written down?—That is all.

2380. But no speech is made of any sort or kind?—No. That is the practice.

2381. (*Lt.-Gen. Peel.*) In the majority of regimental courts-martial the object only is to inflict a heavier punishment than the commanding officer has the power of inflicting himself, is it not?—That is so. No man in point of fact is brought to a court-martial, either a regimental court-martial or a district court-martial, without the commanding officer being convinced, more or less, that there is quite sufficient evidence to substantiate the charge.

2382. (*Chairman.*) In a general court-martial, do you approve of the present practice of restricting the assistance of the prisoner to a friend who shall not have the power either of examining the witnesses or of addressing the court?—I think that is right. A man has a friend to assist him, or a legal adviser to assist him, but I should be sorry to see either the legal adviser or the friend address the court.

2383. It has been suggested that the prisoner might be allowed an officer of his regiment, or of some other regiment, if approved of by the commanding officer, to assist him, and that that officer might have the power of addressing the court on behalf of the prisoner. What is your opinion upon that point?—I do not think that there is any reason why a prisoner should not have anybody to assist him if he likes; but that person cannot address the court in his behalf.

2384. And supposing that that friend was an officer of his regiment, you would not even then allow him to address the court on behalf of the prisoner?—No; I have seen the prisoner's defence read for him at a court-martial by another person, and to that I do not object.

2385. (*Lt.-Gen. Scarlett.*) But you object to any *vivâ voce* examination of witnesses, or any speech in defence of the prisoner?—I do not object to *vivâ voce* examination, but I do object to a speech.

2386. (*Chairman.*) In a general court-martial the prosecutor has the power of addressing the court, has he not?—The prosecutor has that power.

2387. At the commencement of the proceedings, and also before the termination of the proceedings?—Yes; the forms that are to be followed are laid down in the Queen's Regulations as regards the Deputy Judge Advocate, the prosecutor, and also the prisoner.

2388. But why should not the prisoner have the same advantage which the prosecutor has?—The prosecutor is a military officer who is appointed to discharge the duty of prosecutor, and the prisoner has anybody he pleases to assist him; and I think that it would be attended with great inconvenience if a prisoner were permitted to have a legal friend, or a legal adviser, to address the court *vivâ voce* or to read a written address.

2389. But the prosecutor is not a legal adviser; but he is generally an officer, is he not?—But prosecutors are very often legally advised. I have in my eye a court-martial where the prosecutor was legally advised by a legal officer of the Crown.

2390. But he has an advantage over the prisoner in that he can address the court himself, whereas if the prisoner is advised by an officer that officer cannot address the court?—I do not know any reason why the prisoner should not, with the permission of the court, have a friend to read his address for him.

2391. Would that be an advantage to him equal to that which the prosecutor enjoys?—The prosecutor in a court-martial generally reads a written address. I have never seen a prosecutor address a court *vivâ voce*.

2392. (*Capt. Vivian.*) Then you do not object to the prisoner having a friend to read his address for him?—I do not see any objection to it.

2393. (*Lt.-Gen. Scarlett.*) Is it forbidden now?—It is not that I know of. I know no reason why it should be.

2394. (*Chairman.*) But the practice, I believe, is not general?—It is not general.

2395. Generally speaking, the prisoner is obliged to read his own defence, is he not?—He is generally; but there is no reason why he should not have assistance if he applies to the court and the court give their permission. On a regimental court-martial or a district court-martial I myself have read the prisoner's defence for him, a written paper which he has given in to the court.

2396. Do you think that an alteration might take place in general courts-martial with advantage in the present practice of every question being put in writing?—Yes, I should like to see cross-examinations conducted without the question and answer being written down; by direct questions to the witness.

2397. Both in examination and in cross-examination?—Yes; I think there is no other way of getting the truth out of a reluctant or mendacious witness.

2398. Do you know in what the present practice originated?—I do not. It is a practice which is not observed, either in district courts-martial or in regimental courts-martial or in general courts-martial of an ordinary description before which soldiers appear.

2399. Then what is the distinction between a general court-martial in which that practice must be observed and one where it need not be observed?—On many general courts-martial on which I have sat, on soldiers and non-commissioned officers, the evidence in chief has been as it is in other courts-martial, viz., in a narrative form. You read the charge to the witness, and you say, "State to the court what you know "about it;" and he then states that to the court. But in cross-examination of the witness I have generally seen the questions written down by the prosecutor.

2400. And you would recommend that this should also be *vivâ voce*?—I have seen a great miscarriage of justice occasionally from not being able to get the truth out of a witness.

2401. Do you think there is any possibility, by means of written questions and deliberate replies in writing, of ascertaining the real truth?—I think it is a very long proceeding, and it gives the witness greater time to think.

2402. (*Mr. Mowbray.*) Do you think it would be desirable to have a shorthand writer at every general court-martial?—Certainly, if the questions are to be taken *vivâ voce*.

2403. And then a perfect record would be preserved for the Judge Advocate-General of all that had passed?—Yes, and for the court before they came to their decision.

2404. (*Lt.-Gen. Peel.*) Of course you would apply the same rule to the prisoner, that he should be allowed to put any questions without putting them down in writing?—Certainly.

2405. (*Chairman.*) Would you approve of its being a general rule that a soldier tried by a court-martial should have the power of selecting an officer to stand by him?—I do not think it is necessary. I think the non-commissioned officers and soldiers of the army are very well satisfied with the present arrangement.

2406. Have you in the course of your military experience heard many complaints on the part of soldiers of injustice perpetrated by courts-martial?—I have not. I have inspected a great many regiments of late years, and I have never heard any complaints. I have heard a soldier make a complaint on a matter of pay, but I never heard any complaint from any soldier yet of the proceedings of a court-martial. I have had a great many regiments under my command of late years, mixing with them every day and being seen by

the troops, and I have never heard any complaints. I think there was one case at Malta in which there was a complaint of a court-martial at a half-yearly inspection; but, if my recollection serves me correctly, it was explained to the man, and he was convinced that every justice had been done him.

2407. (*Lt.-Gen. Peel.*) Do you think a soldier would prefer having his case tried by a civil court rather than by a military court?—I think he would rather be tried by a military court.

2408. (*Mr. Mowbray.*) Is it within your experience that officers are satisfied with the present system of trial by court-martial?—I have never heard any complaints.

2409. (*Chairman.*) Would you explain to the Commission under what circumstances a court of inquiry is called for instead of a court-martial upon an officer?—A court of inquiry is a preliminary examination. It is more for the taking of evidence than anything else, but it is so far an unsatisfactory tribunal that you cannot examine witnesses upon oath.

2410. Is the result of a court of inquiry ever that an officer is censured upon the finding of that court?—Yes; I have known an officer censured by his commanding officer. The court of inquiry is strictly for the information of the commanding officer. Sometimes a court of inquiry is instructed to give an opinion, at other times the court of inquiry takes evidence without giving an opinion, and it is generally regarded as a preliminary proceeding for the information of the commanding officer, on which he may or may not think it right to bring the offender to a court-martial.

2411. Has the officer subject to the inquiry, if he is dissatisfied with the results of the inquiry, a power of appealing to a court-martial in all cases?—No officer can demand a court-martial.

2412. Has he the power of appealing to a court-martial?—I should think he could always make his appeal to the general officer, and it would be for him to decide; but I do not think an officer could demand a court-martial. There is no such thing as demanding a court-martial.

2413. (*Capt. Vivian.*) Do you know any instance in which an officer has been told, upon the report of a court of inquiry, that he must leave the service, and in which, upon his remonstrating and demanding a court-martial he has been refused that court-martial?—I do not.

2414. (*Lt.-Gen. Peel.*) Might not a court of inquiry be constituted in order to inquire into the fitness or otherwise of an officer for promotion, although it might involve no military crime for which you could try the man by court-martial?—I have never seen that done. There are regimental boards that sit for the examination of officers up to a certain rank, for subaltern officers up to the rank of captain; but I have never known an instance of a court of inquiry assembled for that purpose.

2415. May not an officer be removed from the service for unfitness without having committed any crime which might subject him to a court-martial?—There is no doubt he may be removed if the Commander-in-Chief thinks that he is an officer unfit for the service. Any officer may be removed from the service.

2416. (*Mr. Mowbray.*) Strictly speaking a court of inquiry is no court at all?—No.

2417. They have no power of compelling the attendance of witnesses, and they have no power of examining on oath?—No.

2418. (*Chairman.*) Have you any suggestions to make as to an alteration of the present practice of courts of inquiry?—No; personally, I think them unnecessary tribunals.

2419. (*Mr. Mowbray.*) And do you think them unsatisfactory?—They are unsatisfactory also.

2420. (*Chairman.*) Do you think that in all cases where it is necessary to have a court of inquiry it would be better at once to substitute a court-martial?—I think that the commanding officer ought himself to examine into the case before him, and arrive at his own decision and act accordingly, and if it was a case for a court-martial he should refer it to a court-martial.

2421. How is a court of inquiry constituted now?—By the commanding officer.

2422. Of what ranks and of what officers is it usually constituted?—It is constituted according to the nature and gravity of the case that is brought before it. Sometimes it is composed of three field officers, sometimes of a captain and two subalterns, and sometimes of three captains.

2423. That is at the sole discretion of the commanding officer?—Yes. I think a court of inquiry is useful in some respects; that is to say, a court of inquiry that inquires into the circumstances of transactions that take place, such as a fire for instance, because there you really arrive in a tangible form at the evidence, such as it is, that can be given; but in every case as regards crimes committed by officers and non-commissioned officers or soldiers, I think it is a very unsatisfactory tribunal.

2424. (*Lt.-Gen. Peel.*) As I understand, you would not relieve, by means of a court of inquiry, the responsibility of the commanding officer?—Certainly not.

2425. And that is the ground upon which you would propose to do away with courts of inquiry?—Yes.

2426. (*Chairman.*) I believe that public attention has been drawn to one or two courts of inquiry in these latter years. Can you state to the Commission what has been the ground of complaint on the part of officers?—No, I have no knowledge of that.

2427. (*Lt.-Gen. Eyre.*) The only courts of inquiry recognized in the Articles of War, 165, 166, and 167, relate to the nature of wounds, the record of services, and the illegal absence of soldiers, do they not?—That is all.

2428. (*Capt. Vivian.*) But in the Queen's Regulations the scope of a court of inquiry is very much larger, because it says by Regulation 786, that "A court of inquiry is not to be considered in any "light as a judicial body. It may be employed, at the "discretion of the convening officer, to collect and "record information only, or it may be required to "give an opinion also on any proposed question or as "to the origin or cause of certain existing facts or "circumstances," and by the preceding Regulation, "A court of inquiry may be assembled by any "officer in command to assist him in arriving at a "correct conclusion on any subject on which it may "be expedient for him to be thoroughly informed. "With this object in view, such court may be directed "to investigate and report upon any matters that "may be brought before it; but it has no power "(except when convened to record the illegal absence of soldiers, as provided for in the Articles of War) to administer an oath nor to compel the attendance of witnesses not military"?—I think it is a very unsatisfactory tribunal.

2429. (*Chairman.*) Do you think that it would be advisable at once to put a stop to the possibility of having a court of inquiry?—I can only repeat that I think it is a very unsatisfactory tribunal and a very unnecessary one.

2430. Is it of frequent occurrence to order a court of inquiry?—Yes.

2431. At present I believe the commanding officer of every regiment has the power of ordering one?—Yes, certainly.

2432. And the officers of his regiment are obliged to sit upon that court?—Yes, but they are ineligible for sitting on the court-martial afterwards, supposing a court-martial is held in consequence of the inquiry.

2433. (*Lt.-Gen. Eyre.*) Do you not think that a court of inquiry may be unavoidable under certain circumstances occurring in war, for example, as to the general management of either a fleet or an army, which is a matter with which no commanding officer or individual could inquire, and in which a court of that description would be requisite to record those

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facts?—Do you mean an inquiry on the part of Her Majesty's Government into the conduct of a general commanding?

2434. Might not their instructions be so framed as to avoid that, and to ascertain a number of important facts?—I think it would be much more satisfactory to bring the party to a court-martial at once.

2435. But that might be an impossible thing to do without this evidence, might it not?—But you cannot get evidence upon oath at a court of inquiry; and very often evidence given before a court of inquiry, when tested by oath and properly examined, fails.

2436. (*Lt.-Gen. Scarlett.*) Is not a court of inquiry somewhat similar to a grand jury who examine one side of a question?—A grand jury have sworn depositions before them, whereas a court of inquiry has mere evidence not taken upon oath.

2437. (*Mr. Mowbray.*) The evidence taken before the grand jury is in fact taken on oath?—They are in fact sworn depositions.

2438. Only the witnesses on the part of the prosecution are produced, and the grand jury may examine any of those witnesses, and whoever is examined is examined only on oath?—Yes.

2439. (*Lt.-Gen. Scarlett.*) But they only summon witnesses for the prosecution?—Only for the prosecution, because the grand jury examination is a preliminary examination to find a true bill or not.

2440. (*Lt.-Gen. Peel.*) But would you deprive the commanding officer of any means which he might think proper to use to find out the circumstances of the crime before he ordered a court-martial?—I would not deprive him of those means; I am merely giving my opinion that it is an unsatisfactory tribunal, and one to which I would not personally resort, unless under very exceptional circumstances. There are cases probably in which a court of inquiry might be of great use, such as the case of a fire, or a case where two officers had had a difference, and I should be more inclined, I think, to have a court of inquiry with a view of arranging those differences.

2441. (*Mr. Mowbray.*) In fact you object to the term "court," because it seems to carry with it the idea of a judicial proceeding; whereas in the Queen's Regulations it is expressly stated (as is in fact the case) that it is not in any light a judicial body?—That is one of the reasons why I object to it.

2442. There is no security for such an investigation as would be pursued by an ordinary judicial tribunal, and there is no security for the conclusion at which the court may arrive?—I think there is not.

2443. (*Lt.-Gen. Peel.*) The proceedings of a court of inquiry never go beyond the person by whom that court of inquiry was ordered in the first instance, do they? You could not put them in evidence?—No. You could not put them in evidence.

2444. In point of fact it is only for the information of the person whose duty it is afterwards to decide how the case should be treated?—Yes.

2445. (*Capt. Vivian.*) But supposing that a commanding officer orders a court of inquiry to assemble to consider something with regard to one of his officers, and that he thinks it necessary to take proceedings upon the report of that court of inquiry, such as to recommend that the officer should retire from the service; would not he then be obliged to report to the general commanding the district the fact that he submitted that that officer should be obliged to leave the regiment upon the report of that court of inquiry?—He would most likely do so.

2446. But then the officer upon whose conduct this court has been ordered to report would not have any opportunity of cross-examining the witnesses, or of otherwise testing the truth of the charges brought against him, would he?—Yes he would, because he would be present at the court of inquiry.

2447. But he cannot cross-examine witnesses?—I see no reason why he should not do so. I have been on several courts of inquiry, and I have never seen a person who appeared before a court of inquiry charged with any misconduct precluded from putting questions in cross-examination.

2448. The person charged cannot himself bring witnesses, can he?—Yes, he may.

2449. (*Lt.-Gen. Peel.*) Is not a court of inquiry often asked for by the person charged with an offence?—I have heard of officers asking for a court of inquiry into their conduct.

2450. (*Mr. Mowbray.*) But the report of a court of inquiry carries with it a semblance of authority which in your opinion it ought not to possess from the way in which its proceedings are conducted?—Yes; the court can only give their opinion upon the evidence which appears before them, and very often, the evidence not being upon oath, they do not arrive at the truth.

2451. (*Lt.-Gen. Eyre.*) As regards witnesses being upon oath, are you aware that it is the rule in Prussia that regimental courts-martial are not sworn?—I am not aware of it. I do not know anything about the Prussians.

2452. (*Marquis of Hartington.*) Would you suggest any alteration in the regulations affecting courts of inquiry?—I cannot do so. It is a subject to which I have not much turned my attention.

2453. An officer may be ordered by his superior officer to appear before a court of inquiry, may he not?—Certainly.

2454. Do you think that it is desirable that that practice should be resorted to, or do you think that it would be better that no one should be compelled to appear before a court of inquiry except voluntarily?—I should be sorry to see the existing practice altered. I think that every officer should be bound to obey the lawful command of his commanding officer, and that is a perfectly lawful command, as the regulations exist.

2455. (*Lt.-Gen. Peel.*) A military officer now may be ordered to attend a court of inquiry, but the court of inquiry have no power of insisting upon and compelling the attendance of a civilian, have they?—No, they have no power of compelling a civilian to go before them, but of course they have the power of compelling a military witness to go before them. So long as the institution of courts of inquiry is maintained I should not like to see any change made in the present regulations; I do not think that there should be anything optional as regards officers, but that they should be compelled to obey orders.

2456. (*Mr. Mowbray.*) Your idea is that they should be compelled to attend as at present, but that they should not be compelled to give any information?—Certainly not.

2457. (*Capt. Vivian.*) So long as courts of inquiry are maintained?—As long as courts of inquiry are maintained.

2458. But you think that they are unsatisfactory tribunals?—I think so.

2459. (*Marquis of Hartington.*) But you would not alter the regulations as to holding them?—I would not. There are certain cases, as I say, where you want to ascertain the facts, say about fires and things of that sort, where such courts are desirable, but I think inquiry into an officer's conduct before a court of inquiry is unsatisfactory.

2460. (*Capt. Vivian.*) Would you not alter the regulations so far as to limit the occasions on which courts of inquiry might be legally assembled to certain specific cases?—Perhaps that might be done, but it requires great consideration, and I should not like to give an off-hand opinion on it.

2461. (*Lt.-Gen. Scarlett.*) With respect to courts-martial in general, have you any suggestions to make by which you consider they might be improved as regards their practice, or their formation, or the general conduct of the courts?—I have not; I am satisfied with their composition. I think however that the liability to be tried by court-martial should be extended to all officers who hold the Queen's commission. I do not think that it should be confined only to officers upon full pay.

2462. (*Lt.-Gen. Eyre.*) In some Continental armies there are permanent courts, that is to say, the president is appointed for a year and some members for six months, and others for three months; do you see any merit in that?—No; I think that it would be very unpopular in the British army.

2463. (*Lt.-Gen. Scarlett.*) Do you think that it would be of any advantage to have permanent courts-martial, say in London, at Aldershot and in the northern district, so that instead of taking officers by roster, and as it were by chance, you should appoint some people who are well instructed and who are known?—No, I do not think so. I think the present system would be much more popular with the army at large.

2464. And you consider it to be quite efficient?—I really have heard no complaints about it.

2465. (*Lt.-Gen. Eyre.*) I believe that in civil courts after a prisoner is found guilty, he is asked by the judge if he has anything to say why sentence should not be passed upon him, would there be any good or any mischief in giving that privilege to a soldier before a court-martial?—I do not think that it is necessary; he has had every opportunity of making his defence. I do not think the army are at all dissatisfied with courts-martial, that is to say non-commissioned officers and soldiers. So far as my experience shows me, the army in general are satisfied that substantial justice is done to them.

2466. (*Capt. Vivian.*) One witness before this Commission told us that he wished the power of commanding officers to be extended, and he said that he should like them to have the same powers as those of a magistrate with regard to certain punishments; and the witness who followed him said that if such powers were given to commanding officers, he thought that it would be a very good thing to do away with regimental courts-martial altogether. What is your opinion upon that point?—I am not in favour of doing away with those courts-martial.

2467. Are you in favour of increasing the power of commanding officers with regard to the punishment of men?—Yes, I am. I should like the commanding officer to have the power of fining a soldier a small sum for drunkenness.

2468. (*Chairman.*) Subject always to an appeal to a court-martial?—Subject to an appeal to a court-martial. I would never touch a soldier's pay either for absence or for drunkenness without his being able to appeal to a court-martial if he liked.

2469. (*Capt. Vivian.*) What is the extent of a commanding officer's powers now as to minor punishments?—By the Queen's Regulations, page 82, section 339, "commanding officers are authorized to "award the undermentioned punishments only for "such offences as are not deemed of a sufficiently "serious nature to be brought under the cognizance "of a court-martial, namely: (*a*) imprisonment or "deprivation of pay, or both, to the extent authorized "by the Mutiny Act and Articles of War. The "imprisonment, which is to be reckoned from the "date of the commanding officer's award, is to be "carried out in the provost cells in conformity with "the regulations contained in section 15. In the "Royal Engineers forfeiture or reduction of the "several rates of working pay may be awarded in "certain specified cases. (*b*) Confinement to barracks for any period not exceeding 28 days, which "carries with it punishment drill to the extent of "14 days, the taking all duties in regular turn, "attending parades, and being further liable to be "employed in duties of fatigue at the discretion of "the commanding officer. Every award of confinement to barracks for 14 days and under is to "carry with it punishment drill, which in the "mounted services is to be 'kit drill,' and in the "infantry 'marching order.' (*c*) Extra guards or "pickets, but these are never to be ordered as a "punishment, except for minor offences or irregularities when on or parading for these duties."

2470. Does it say nothing about cells there?—By the Mutiny Act and the Articles of War you will find that seven days' cells may be given.

2471. One witness recommended that the power of the commanding officer should be extended to punishment up to 28 days' cells with appeal to a court-martial; do you recommend that, or not?—I do not.

2472. You think that the commanding officer's powers should not be extended?—Not as to increasing the term of imprisonment.

2473. With regard to the composition of regimental courts-martial, you said, did you not, that you thought that no officer should sit upon a court-martial until he had been three years in the service?—On general courts-martial.

2474. Would you put any limit upon the term of service after which a subaltern should sit upon a regimental court-martial?—I think that no officer should be put upon a regimental court-martial until the commanding officer is convinced that he is thoroughly acquainted with his duties.

2475. (*Chairman.*) Do you see any reason for the regulation which at present exists that an officer on half pay cannot be tried by court-martial?—No, I think it very desirable that every officer holding the Queen's commission should be liable to be tried by court-martial for military offences.

2476. Can you suggest any reason why the practice has been otherwise up to the present time?—I cannot.

2477. Have you known officers in your experience who have taken advantage of that circumstance to evade the effects of being tried by courts-martial?—I have known officers on half pay behave very improperly.

2478. And the authorities have had no power in getting at them?—None.

2479. Could you suggest any regulations which should limit the trial of an officer on half pay, or would you make him subject to all the regulations which apply to an officer of full pay?—I would make him liable to all the regulations which apply to an officer on full pay as to offences against military law.

2480. Has not the necessity often occurred to commanding officers of trying a man on half pay, and it has been denied to them in consequence of the person charged being on half pay?—It is held to be impossible to try a half-pay officer.

2481. At the Horse Guards and in the Judge Advocate-General's office?—I have always understood that it is impossible to try a half-pay officer. It is the invariable rule.

2482. (*Capt. Vivian.*) Does it not go on to specify those who can be tried, and does it not say those "who are or shall be serving with any part of Her "Majesty's army at home or abroad under the command of any commissioned officer"?—It does.

2483. Do you not think that all those persons being so clearly specified who are liable to be tried by court-martial, and all mention of officers on half pay being omitted, the section as it stands now excludes officers on half pay from being being tried by court-martial?—But officers on half pay hold the Queen's commission.

2484. (*Mr. Mowbray.*) The invariable practice has been not to try half-pay officers, has it not?—That has been the invariable practice; an officer on half pay is an unattached officer.

2485. (*Chairman.*) Is an officer on half pay subject to the provisions of the Mutiny Act in any way?—Certainly not, according to the ruling.

2486. But you would recommend that he should be subject to the Mutiny Act in every way?—I think so.

2487. (*Mr. Mowbray.*) An officer on half pay can be tried by court-martial for offences committed by him when he was on full pay, can he not?—I do not know whether or not that is so.

2488. But an officer on half pay is not liable to be tried for any offence committed by him after he went on half pay?—No.

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2489. Then if an officer on half pay misconducts himself, there is nothing to be done but to bring the case before the Commander-in-Chief, and to leave the matter to the prerogative of the Sovereign?—That is the only course. I think that an officer on half pay might commit some very improper act as regards the army, as regards the Commander-in-Chief, or his superior officer.

2490. And if an inquiry into that act is needed there is nothing but that unsatisfactory tribunal which you have already described, namely, a court of inquiry?—You could not hold a court of inquiry upon a half-pay officer that I am aware of, but by the exercise of the prerogative of the Crown he might be removed from the half-pay list.

2491. Either step is a summary proceeding, and there is no security for a full investigation of the case?—There is not.

2492. (*Lt.-Gen. Eyre.*) Is it not the case that the Articles of War only empower a court-martial to sentence a commissioned officer?—Yes, the practice is quite clear.

2493. (*Capt. Vivian.*) You have said that you would not recommend that the adviser to a private soldier should be allowed either to address the court *vivâ voce* or to cross-examine witnesses; is it not a fact that cases of embezzlement are generally very difficult cases, involving legal difficulties?—They are.

2494. Would you recommend that such cases should continue to be tried by court-martial, or would you prefer that they should be referred to a civil tribunal?—I am rather in favour of their being transferred to the civil tribunals. We are thinking in the War Office, as regards the Departmental Corps, of having all cases of embezzlement transferred to the civil power for trial, and not trying those men by court-martial, as the courts-martial have been very unsatisfactory in their proceedings in such cases.

2495. And you would prefer, if it is possible, that all such cases should be transferred to the civil tribunal?—I do not say that I should prefer it. I should prefer that they should be tried by courts-martial, because I think that anything which tends to lessen or to diminish the military character connected with military offences is objectionable; that is to say, I think that a military offence ought to be tried before a military tribunal; but at the same time such cases involve very often such difficult points of law, and the inquiries depend so much upon very unsatisfactory evidence, that in the interests of justice probably it would be better to have them tried by civil tribunals.

2496. (*Chairman.*) Complaint has been made of the practice which now exists of a revising officer having the power of sending back the finding of the court with a view to an aggravation of the punishment; do you see any necessity for maintaining that power?—No, I think that is an improper thing. It is undesirable, I think, that a commanding officer should send back the finding for an increase of the punishment.

2497. It has been stated to us that it sometimes occurs that a court-martial has been mistaken as to the crime, and have awarded for one crime a punishment which belongs to another; would you give the revising officer in that case the power of sending it back for reconsideration?—Certainly.

2498. But that often leads to an aggravation of the punishment. For instance, a case was stated to the Commission the other day of a man who was tried for desertion, for making away with necessaries, and for fraudulent enlistment; the court-martial punished him for simple desertion, and the commanding officer sent back the finding to the court on the ground that it was an improper finding, and they then proceeded to sentence that man upon all the charges, they having had those charges before them, and having omitted to take notice of more than one of them. Do you think that, under such circumstances, it is advisible that the revising officer should retain the power of sending back a case of that kind for further punishment?—Personally speaking, I should not send that court-martial back for an increase of punishment, but I should have sent it back if they had not put the man under stoppages to replace his necessaries and the sum he received when he fraudulently enlisted. I should have considered that imprisonment for 56 days was a sufficient punishment for the desertion and the fraudulent enlistment; but I should have advised the court to put the man under proper stoppages to replace the necessaries which he had made away with; I mean that he should have been put under all legal stoppages to which he was liable under the Mutiny Act.

2499. I collect from the answer you have just given that, under certain circumstances, it is in your opinion advisable that the power of sending back the sentence for an alteration of the punishment should be maintained?—Yes, I have a strong opinion that it is advisable to allow the power of revising the finding of a court-martial. I have had occasion to send back several courts-martial in my experience in which the finding was in direct opposition to the evidence.

2500. But has it never occurred to you that there has been a finding acquitting the prisoner and that you have thought it desirable to have him convicted?—In some cases I have thought it very desirable to point out to the court the nature of the evidence and the conclusions at which they had arrived. I did afterwards confirm the court-martial, but I could not approve a court-martial which was, in my opinion, in direct opposition to the evidence.

2501. And that was an acquittal?—That was an acquittal. Those were courts-martial on officers.

2502. Did you ever know a similar instance with regard to private soldiers?—I think I have. I am in favour of retaining the power of revision. I am against revising the sentence of a court-martial as regards the quantity of the punishment awarded, but I am in favour of the confirming officer having the power of revising the proceedings as regards the finding of the court.

2503. (*Lt.-Gen. Scarlett.*) Where the man has had a lesser punishment assigned to him than probably you think he ought to have, you would probably give him the benefit of that?—I would.

2504. (*Mr. Mowbray.*) But if the man is acquitted when you think he ought to have been convicted you would not give him the benefit of the doubt entertained by the court?—I am not certain that it is a doubt. I have sometimes seen courts-martial in which the finding, in my opinion, on reading it, has been in direct opposition to the evidence.

2505. But you would not in such a case give the prisoner the benefit of the opinion of the court?—I would have the court reconsider their finding, and then if they adhered to it I have nothing left but to confirm it.

2506. There is no such proceeding, is there, in the ordinary civil tribunals of the land?—No; but I think in courts-martial the members of the court are under considerable disadvantages, so to say. The transactions generally take place in a small society where the circumstances are known beforehand; they are largely canvassed, and I cannot help thinking that officers very often are without the advantages of judges who try a case of which they know nothing.

2507. You think that the court in those cases arrive at the conclusion from extraneous considerations rather than from the evidence given before them?—Yes. In the same way I have served at a station where the military tribunals had cognizance of criminal cases between civilians and the troops, and I consider a court-martial a very unsatisfactory tribunal for that purpose.

2508. (*Mr. Whitbread.*) May I ask upon what ground you think it desirable that a sentence should not be revised as against the prisoner as regards the punishment?—I would give the prisoner the benefit of the decision of the court as regards the punishment. I might have an opinion that a man receiving 56 days has committed a crime, which, as I read the proceedings, deserved a greater amount of punishment

but still I would give him the benefit of what the court had decided.

2509. (*Lt.-Gen. Eyre.*) The benefit of the mistake?—In my opinion the benefit of the leniency they had shown.

2510. (*Mr. Whitbread.*) I fail to draw the distinction between the reasons which would actuate you in that case and in the case where the court had pronounced a sentence of acquittal?—I judge from the evidence which is before me. I have never revised a court-martial on the finding without stating my reasons, and without analysing the evidence and pointing out to the court where I differed from them.

2511. Are you of the same opinion as a witness who appeared before us at the last sitting of this Commission, that it is necessary that courts-martial should in no case pronounce a sentence which it is within the competence of the commanding officer to have pronounced without referring the matter to a court-martial?—I should not as a commanding officer interfere with the court-martial in a case in which the sentence of the court was less severe than I could have myself inflicted; but I should not approve it, because I should have sent that man before a court-martial for the reason that I thought on the preliminary examination that I had held that he deserved a punishment in excess of the punishment that I could of my own authority have awarded.

2512. Supposing that to have been the opinion of the commanding officer, and that when the prisoner came to be tried before the court-martial extenuating circumstances appeared which in their mind made the punishment which could have been inflicted by a commanding officer a sufficient one for the offence, how would you deal with such a case?—I should not interfere with the sentence of the court. I should accept it.

2513. You would approve of it?—No, there is a difference between approval and confirmation. When I entirely go with the court-martial my practice is (and I believe it is the practice of every officer of the service) to approve and confirm the proceedings; but in the other case I should only confirm the proceedings.

2514. But still you think it should be in the power of a court-martial to pronounce such a sentence as in their opinion is adequate for the offence?—But I may not agree with the court; a court-martial of course can sentence a prisoner to any punishment which it is within the competence of the court to award.

2515. You think that the maximum punishment allowed to the court-martial includes any sentence less than that?—I should think they could award less punishment than the maximum.

2516. (*Lt.-Gen. Scarlett.*) You mean, to put it very broadly, that a court-martial may give any imprisonment from a day to two years?—I should think so. I know no legal reason why they should not do so. There is no legal reason why the court should not sentence a man to any term of imprisonment which the court is competent to award.

2517. (*Lt.-Gen. Peel.*) A regimental court-martial having convicted a prisoner, you would not make it compulsory upon them to award a heavier punishment than the commanding officer had the power to inflict?—Not if the court were of that opinion. I should not interfere with it as a commanding officer.

2518. (*Mr. Whitbread.*) And you do not think it desirable to tie their hands or fetter their discretion in any way?—I think a maximum ought to be fixed for a court; but I do not think a minimum ought to be fixed. As a commanding officer I probably might not agree with the court, but I would give the prisoner the benefit of it, and I should not approve the sentence.

2519. Supposing a staff-serjeant is brought before a court-martial, it would have been in the power of the commanding officer to reduce that man to the position of a serjeant, but the commanding officer, thinking that the offence is one which deserves a more serious punishment, orders the man to be tried by a regimental court-martial, it is in the power of a regimental court-martial to reduce that non-commissioned officer to the ranks, do you not think that it also ought to be in their power to award the lesser punishment of reduction to the rank of serjeant?—I do not.

2520. Upon what ground do you draw the distinction between that case and the punishment of imprisonment and fine to which you have just referred?—Because it is not usual; it is not the practice of the service.

2521. I am speaking now of what ought to be the practice of the service and not of what is the practice?—I think it ought not to be.

2522. The maximum being fixed, do you not think that the superior court, that is the court-martial, ought to have it in its power to award any punishment short of that maximum of the same kind?—It depends very much upon what is the practice of the service. I think that a serjeant might be reduced to a corporal, but it would of course depend upon the nature and character of the offence. If a non-commissioned officer, a serjeant, had done anything that was highly improper, of course the only thing would be to reduce him to the ranks.

2523. (*Mr. Headlam.*) Would you carry this principle further, and would you give a power to reduce a lieutenant to an ensign?—I do not think I would.

2524. In any of the grades of commissioned officers would you introduce the power of reducing an officer from one grade to another?—No.

2525. But you would give that power with respect to the reduction of a serjeant to a corporal?—I would.

2526. (*Mr. Whitbread.*) The facts having been stated by previous witnesses and by yourself, I now want to know why, in your opinion, the power of awarding any sentence of the same kind short of the maximum which they are by law empowered to award, should not be given to courts-martial?—I do not see any reason why, if you define it by law, they should not have it; but at the same time I think it would have an injurious effect upon discipline. A non-commissioned officer is never tried except for a very serious offence, and a commanding officer naturally looks to a court-martial to support him in maintaining the discipline of his regiment.

2527. (*Lt.-Gen. Scarlett.*) Do you think it would be injurious to discipline to reduce a non-commissioned officer from one rank to another rank; and in fact that he would not be so efficient in the inferior rank as if he had not been reduced?—I think it would not be injurious to discipline for a court-martial to have the power of reducing a serjeant to be a corporal.

2528. But do you think that a corporal who was reduced would be as efficient a non-commissioned officer as if he had never been reduced?—I think he might be a very efficient corporal. I have seen many men who have been reduced from the rank of serjeant to be privates, who have become non-commissioned officers again, and very efficient non-commissioned officers. I have always felt great difficulty about a serjeant who is not equal to his duties. In such a case a commanding officer is in a position of great embarrassment; he does not know how to get rid of him. A man may be a very good corporal and a very bad serjeant.

2529. Do you think if a serjeant was reduced for drunkenness to the rank of corporal he would have the same command over a company as a man who had never been reduced?—I look upon drunkenness in a non-commissioned officer as a very serious crime, but there are many cases which I can suggest to myself where I should be very glad to see a court have the power of reducing a serjeant to be a corporal.

2530. (*Capt. Vivian.*) The fact of a non-commissioned officer being tried by a court-martial at all is a very serious one for him as regards his future prospects, is it not, because if he is found guilty the proceedings of the court are recorded against him,

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and that causes him to forfeit all rewards and pay?—That depends upon what he has been tried for. It always appears in his record of service that he has been tried by court-martial and has received punishment; but I have known many valuable non-commissioned officers who have been reduced and have been remade non-commissioned officers. I have known a non-commissioned officer who had been reduced and who had become an officer.

2531. (*Lt.-Gen. Scarlett.*) When a commanding officer by the power of the colonel reduces a non-commissioned officer, is it, generally speaking, for some crime which he has committed, or is it for inefficiency?—I have very rarely seen it resorted to. I do not think I can recall a single instance.

2532. In the event of inefficiency in a non-commissioned officer, but no crime having been committed, would not the reduction by the power of the colonel be preferable to reduction by the power of the court-martial?—Certainly, but a commanding officer has not that power.

2533. Is not that power of the colonel generally applied in such cases of inefficiency?—I believe it is, but I have rarely seen such cases.

2534. Do you believe that it would be advantageous to establish a code of minor punishments in the army?—I do.

2535. Would it be possible to establish a scale of punishments for each crime, leaving a certain limit of discretion to the court-martial, or to the commanding officer?—I think it would be very desirable to have a scale of punishments, but the scale of punishments ought to be drawn up with great consideration by experienced commanding officers of regiments, and submitted for the Commander-in-Chief's approval. I am talking of minor punishments, and not of punishments inflicted by courts-martial. The practice in regiments varies so much that it would be very desirable, if possible, to fix it, more or less.

2536. Is not the punishment for drunkenness, for example, varied very much in different regiments?—Very much. When I received an order from the Adjutant General to try every man who had been drunk four times within 12 months for habitual drunkenness, I called for returns from the different regiments under my command at that time. There were six regiments of the line, a brigade of artillery, two companies of engineers, and a colonial regiment. In one regiment of the line there were I think 110, or certainly more than a hundred men liable to be tried for habitual drunkenness, who were not tried. In other regiments in that command drunkenness had been visited more severely, and the men had been tried by court-martial for habitual drunkenness; and no doubt the men of those regiments, comparing notes with those of the other regiments, thought they were more hardly dealt with.

2537. But this is an occurrence, is it not, which took place previous to the regulation that a man must be tried by court-martial on the fourth offence?—Yes; I had a return of the men liable to be tried at that time, because I wanted to ascertain what the practice in regiments was.

2538. Do you think that the present regulation of compelling a court-martial to be held for the fourth offence is desirable?—I am for taking every step that will check drunkenness. I look upon it more with regard to stopping a soldier's pay than inflicting a term of imprisonment upon him. I would rather see a stoppage of pay and a short term of imprisonment inflicted, because you wish to take away from him the means of getting drunk.

2539. Do you think that the new regulation making it obligatory upon a commanding officer, except under certain circumstances, to try a man for habitual drunkenness on the fourth offence is an advisable regulation?—I think it has checked drunkenness a little. I have found that commanding officers viewed in such a different way their powers of discretion as regarded trying men, that I at last requested Generals of brigades to examine all untried cases, and I also myself had cases submitted to me which were not tried. The order gives a discretion—every man who has been drunk four times is to be tried, unless there are circumstances which, in the opinion of the superior authority, would render it undesirable to try him.

2540. (*Chairman.*) But, under the existing regulation, in revising the defaulter book of a regiment, it would be remarked upon by any inspecting officer, I presume, if any soldiers appeared in that book for the fourth time without being tried by a court-martial?—A good many men may be drunk between the half-yearly inspections. A general officer only sees the books at the half-yearly inspection, unless he likes to call for them at other times, which it is perfectly in his power to do.

2541. An inspecting officer would animadvert, would he not, upon any entry by which it was shown that a man who had been drunk four times had not been tried by court-martial?—I should think so.

2542. It has been suggested that the regulation should be extended; that a commanding officer should not be compelled to try a man by court-martial until the eighth time of drunkenness, what is your opinion upon that?—I do not agree in that suggestion.

2543. You would recommend that for drunkenness a fine should be imposed?—I think so.

2544. How would you apply that fine?—I should forfeit it in the same way that a man's pay for absence without leave is forfeited.

2545. On the ground that the country have lost the services of that man during the time he was drunk?—Yes, that he did not do his duty.

2546. You do not think it would be advisable to apply that fine to any fund for the good of the soldier?—I am against that.

2547. Either for the army generally, or for his regiment?—Yes.

2548. On what grounds would you object to that?—I think there are quite means enough at the disposal of regiments for every purpose that they require, and I think it would rather have the effect of making those men appear as victims. If a man contributed to that fund you might run the risk of his comrades treating him or of his being more an object of pity probably than anything else. I would forfeit his pay in the same way as his pay for absence without leave is forfeited.

2549. At the present moment is it not the case that the stoppage of pay is only awarded in cases where it is proved that the country has lost the services of a man when he is absent without leave?—Yes, and the country equally loses his services when he is drunk.

2550. (*Lt.-Gen. Scarlett.*) But now you would substitute a fine for imprisonment for drunkenness?—I would place both within the scale of minor punishments. I would let the commanding officer stop a day's pay from the man, but I would fix a limit to the stoppage. I have read some of the evidence given here, and I see some of the witnesses recommend that it should be extended, for instance, to so many days at 1*d.* a day, but I would rather fine him 1*s.* or 2*s.*, or whatever it might be considered was a right sum.

2551. (*Chairman.*) Do you think it is necessary, now that corporal punishment has been abolished by the Mutiny Act, to substitute any other punishment for those cases to which corporal punishment was applied previously?—I should be very glad to see some efficient power vested in the hands of commanding officers.

2552. Can you suggest any punishment which might be substituted for corporal punishment?—I cannot.

2553. What do you conceive to be the severest punishment now existing?—Solitary confinement.

2554. Do you think that a soldier dreads solitary confinement more than any other punishment?—I think generally they dread solitary confinement properly carried out.

2555. Is it possible under all circumstances in the British army, at the present moment, to carry out the

punishment of solitary confinement?—I do not think it is. I do not think our military prisons are in many places as good as they ought to be.

2556. Are you aware that the punishment of solitary confinement is inflicted in our civil prisons?—I had much rather that soldiers were not sent to civil prisons. I do not think that the solitary confinement in the ordinary run of gaols is at all equal to the solitary confinement that we have in the military prisons.

2557. But would it not be a very great expense to the country to subject a soldier to be confined solely in military prisons?—It subjects them to expense to confine them anywhere.

2558. But the civil prisons are generally at hand, and the military prisons are very often at a distance from where the regiment is quartered?—That would cause expense, of course. The naval prisons, where the sailors and marines are confined, is at Lewes, and men are sent from Portsmouth to Lewes to be confined there.

2559. In the north-east of England there is no military prison, I believe, is there?—There is a military prison at Manchester, I think.

2560. (*Capt. Vivian.*) Now that corporal punishment is abolished, do you not think it would be advisable to strengthen the hands of commanding officers in getting rid of bad characters?—Certainly, if they are properly marked so as to prevent their re-enlisting. We are always glad to get rid of bad characters on condition that they cannot re-enlist.

2561. Is it not the fact now that commanding officers have no power to get rid of bad characters unless they have committed some offence which causes them to be sentenced by court-martial to be marked with the letters "B.C.?"—Except under special circumstances. I have known cases in which bad characters have been represented to the proper authorities and the men have been ordered to be discharged.

2562. Notwithstanding that they have not been marked with "B.C." ?—No, but security of some kind has been taken against their re-enlisting.

2563. By some mark on their person?—The mark is generally "B.C." now.

2564. (*Lt.-Gen. Scarlett.*) But they may be disqualified by age or inefficiency altogether?—Yes.

2565. (*Mr. Headlam.*) Can you discharge a man at the end of his imprisonment without there being any sentence for his being dismissed the service?—The Commander-in-Chief can dismiss anybody.

2566. (*Capt. Vivian.*) Is it not a fact now that men in the Household Brigade are discharged without reference to the Commander-in-Chief if they conduct themselves badly?—The Household Brigade is a special corps, but I believe that to be the case.

2567. Would you recommend that the power which is now in the hands of the commanding officers of the Household Brigade should be extended to commanding officers of regiments of the line?—I would not. I should be sorry to see the commanding officer have the power of discharging.

2568. Why should you not wish that power to be extended to commanding officers of regiments of the line?—I would rather see it done on a proper representation to the Commander-in-Chief. I would not give a commanding officer the power of his own authority to discharge a man.

2569. (*Mr. Whitbread.*) Are you aware that there is no such punishment known in the civil gaols as solitary confinement?—I do not know that.

2570. Are you aware that when a court-martial sentences a man to a period of solitary confinement and to be dismissed, there is no means in the civil prisons for carrying out that sentence?—I was not aware of that. I have served so much abroad of late years that I do not know much about the English prisons, though I know the foreign prisons very well.

2571. With the exception of the sentence of solitary confinement, do you not think that the discipline of military prisons is less severe than that of the civil prisons?—I am not capable of giving an opinion upon that point.

2572. Do you think that punishment may be made more severe in the military prisons?—I think it might.

2573. Are there so many men employed in light labour about the kitchen and about the establishment generally that the sentence is in reality not a very severe one?—Yes; I should make them do all the dirty fatigue work I could, in the neighbourhood of the barracks. I think it would have a very good effect to march those men about in their prison dress with their hair cut short and their beards shaved as an example to the regiment. I think limitation of punishment is a great advantage, and also the instruction in the Queen's Regulations that the locality and climate in which the offence is committed are to be kept in view in awarding the punishment.

The witness withdrew.

THE RIGHT HONOURABLE THOMAS E. HEADLAM, a Member of the Commission, examined.

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2574. (*Chairman.*) You filled the office of Judge Advocate-General for some years, I believe?—I filled the office of Judge Advocate-General from the year 1859 to the year 1866.

2575. During that period did anything lead you to believe that any alterations were required in the Mutiny Act?—I should say, with respect to the Mutiny Act as it now exists, that I think that it is very confused and unduly long, that there are many provisions in it which are not at all necessary in a Mutiny Act, and which, in fact, are unsuitable to it, and that there are some provisions which are obsolete; and I should think that it would be an exceedingly good thing if the Mutiny Act were very carefully revised and re-written, and made as clear as possible, many clauses being omitted which have no reference to the army, or which have become absolute; and if a code of that kind were once carefully drawn up, I do not see under those circumstances any advantage in having that code of military law re-enacted every year. I should make it a permanent code, precisely the same as a civil code. The only portion of the Mutiny Act which would have to be re-enacted every year would be that clause stating the number of men who would be made subject to that permanent code. I think that would be laying the foundation of a much more accurate code of military law than we at present possess.

2576. (*Lt.-Gen. Eyre.*) That would be like the Continental codes, would it not?—I cannot speak as to the Continental codes; but it would be as good, as clear, and as complete a code as could be framed. I see no advantage in having it renewed every year.

2577. (*Capt. Vivian.*) You would have the Mutiny Act renewed every year?—I would retain the special clause defining the number of men and authorizing the men to be subject to the permanent code, but the permanent code itself I would make a permanent Act.

2578. (*Mr. Whitbread.*) Like the Naval Discipline Act?—Much the same.

2579. (*Capt. Vivian.*) Then if any member of the House of Commons wanted to make an alteration in the code he would have to bring up a special resolution for the purpose?—Yes; in precisely the same manner as an alteration of the general law of the kingdom.

2580. (*Chairman.*) You do not think that it is of any public advantage that the Mutiny Act should be re-enacted every year?—So far from its being an advantage I think that there are a great many disadvantages in it; I think that if the Mutiny Act had been enacted in the shape which I suggest, it would have been in an infinitely better state than it is at the present moment.

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2581. Can you point out to the Commission any principal instances in which you think the Mutiny Act is deficient in regularity and uniformity?—I will open it at the 86th section, where I find that there are penalties upon toll-keepers: "If any toll collector "shall demand and receive toll from any of Her "Majesty's officers or soldiers on duty or on their "march, for themselves or for their horses" (and so on) "every such toll-keeper or other person respect- "ively, shall forfeit for every such offence any sum "not exceeding 5*l.* nor less than 40*s.*" Punishments upon toll-keepers are quite out of place in the Mutiny Act. They are part of the law affecting toll-keepers, but they have nothing in the world to do with soldiers; and there are several clauses of that description. I think that there is hardly a section in the Mutiny Act which is well constructed, or which might not be very much abbreviated and made infinitely clearer.

2582. But of course it would be necessary in the first instance to submit any alteration of the Mutiny Act to Parliament?—It should be a regular Act of Parliament, very carefully drawn and considered, and passed precisely in the same manner as any other Act of Parliament. Then, having made the Mutiny Act as clear and as accurate and as precise as possible, I think that the decisions of the Judge Advocate-General upon any important points should be from time to time printed and circulated. The effect of that would be much the same as in the civil courts: that you would have a code, and you would have that code explained by decisions upon important points made by the first constituted authorities upon the subject; and in that way you would, by degrees, get military law clearer and clearer, and any doubtful point would be cleared up.

2583. (*Capt. Vivian.*) I suppose that that includes the fact that, if the Judge Advocate-General finds reason to object to the proceedings of a court-martial upon any legal grounds, he should give those reasons in his decision?—Undoubtedly. I should not give the Judge Advocate-General the power of circulating any law except upon cases which were submitted to him; it would be precisely like a judge—they should not be extra-judicial, but that points which had occurred in practice, and upon which he had given a decision, should be made known, supposing they were of sufficient consequence to make it desirable that they should be so made known.

2584. (*Chairman.*) In what way do you recommend that they should be made known?—I think they should be printed and circulated once every year, and sent to the Deputy Judge Advocates and to the commanding officers of regiments; but I will not precisely define what the circulation should be.

2585. But the object would be to regulate the proceedings of future courts-martial?—Undoubtedly.

2586. Then of course those decisions should be circulated in every regiment?—They should be circulated as widely as they conveniently could be circulated.

2587. Have you any other suggestions to make to the Commission?—Not upon that portion of the subject.

2588. Have you any special suggestions to make with regard to general courts-martial?—I have not so much to submit to this Commission for this reason: that in the year 1864, my attention was directed generally to the defects in the administration of military law, and at that time I was a party to those proposals which were drawn up in 1864, which contained the views which I held as to the improvement of courts-martial, and of general courts-martial more especially, and I have every reason to suppose that the alterations which were then made have done a great deal of good. The most important alteration was that of the establishment of permanent Deputy Judge Advocates, who have, I believe, done their work exceedingly well; and of course the longer they last the more knowledge they get, and the greater confidence is placed in their judgment, so that their usefulness is gradually increasing, and I think they have very much improved the system of military justice. But before that time I should say that I was very much dissatisfied, not with courts-martial generally, but with some particular courts-martial. I thought that the general administration of justice in the army was very good, but every now and then cases of considerable difficulty occurred, which will be quite familiar to the Commission—cases of the trial of officers, or cases of more than ordinary difficulty,—and in those cases a failure of justice almost invariably happened from some cause or another. It was in consequence of that that those resolutions were arrived; at and so far as I know at present, I think they have done a great deal of good, and I am not prepared to make any suggestion in addition to them.

2589. It was not your duty as Judge Advocate-General to attend courts-martial at all, was it?—Not to be personally present.

2590. The Deputy Judge Advocates are permanently selected for each district, are they not?—They are not permanent; I think it is for a term of five years that they are appointed.

2591. Who appoints them?—I consider that the Judge Advocate-General appoints them. They were appointed on the recommendation of His Royal Highness the Commander-in-Chief, but I considered that I appointed them, and that I was responsible for them.

2592. From what class did you appoint them?—They were officers of a certain rank and position in the army, but I did not consider that any particular rank was essential.

2593. You did not select them for their legal knowledge exclusively?—No; I do not think that there was any opportunity of selecting any man who had given any particular proof of legal fitness.

2594. You did not select barristers, for instance?—No; three officers were selected.

2595. (*Capt. Vivian*). Was the selection confined to men of military rank?—No; after inquiring as much as I could concerning them, I appointed gentlemen who were recommended by the Commander-in-Chief, but I considered myself responsible for them.

2596. (*Chairman*). What is the nature of the appointment?—I am not prepared to say what is the amount of remuneration that they receive; but I think they are appointed for five years, and their duties are defined by those resolutions.

2597. How long has that practice gone on?—Those resolutions are dated 1864, and I should think they came into operation in 1865.

2598. Then you have not had an opportunity of replacing any of the original appointments?—I have not.

2599. What do you understand to be the rule now with regard to the renewal of the office?—I am speaking from memory, and I may be inaccurate; but my impression is that they are appointed for five years, subject to re-appointment.

2600. Should you think it advantageous that that office should be made an exception to the general rule of staff appointments, and that the Deputy Judge Advocate should be re-appointed to his existing post?—I think that any Deputy Judge Advocate who has given satisfaction, and who has acquired knowledge, and has given grounds for placing confidence in him, would be re-appointed.

2601. How many Deputy Judge Advocates are there in the United Kingdom?—Three.

1602. Does your experience lead you to believe that that is a sufficient number for the whole country?—I have no reason to suppose that it is not so.

2603. Can you give the Commission any idea of the average number of cases which come before those Deputy Judge Advocates?—I think there was a pressure, and a considerable pressure, upon the Deputy Judge Advocate who acted in Ireland during the time of the Fenian conspiracy; but subject to that I have no reason to suppose that the work is more than they can get through. I cannot state the average number

of general courts-martial in the course of the year, but it can be ascertained without the slightest difficulty.

2604. But each of the Deputy Judge Advocates is now compelled to attend every general court-martial in his district?—One of them must attend every general court-martial.

2605. May any Deputy Judge Advocate attend a court-martial in any part of the United Kingdom?—They are appointed to particular districts; but it would not interfere with the validity of a court-martial if it were attended by a Deputy Judge Advocate other than the one who had been appointed to the district in which it was held. Unless there was some order for it, each man would attend the courts-martial in the particular district to which he was appointed.

2606. What do you consider to be the special duty of the Deputy Judge Advocate under the present regulations?—I do not think I can define it better than by reading this resolution:—"That he should "maintain an entirely impartial position, and act as "assessor to the Court. That he should give his "advice on all matters of law, evidence, or procedure; "and whether consulted or not, interfere to ensure the "due formality and legality of the proceedings. That "at the conclusion of the case, he should sum up the "evidence, and give his opinion upon the law before "the Court proceeds to deliberate upon its finding."

2607. During your experience at the time you held office have you any reason to believe that his duties could be enlarged with advantage beyond what you have now stated?—No; I think that the powers given to him were very ample. I considered that he was to decide upon all matters of law, and that he had to fulfil as nearly as possible the duties of a judge at a civil trial.

2608. Do you think that under those powers which you have now defined it was incumbent on him in any way to take charge of the prisoner's case?—Precisely in the same way as a judge takes charge of the prisoner's case if he sees any defect for the benefit of the prisoner of which notice has not been taken.

2609. (*Capt. Vivian.*) Do not the Queen's Regulations specially say that he is to take care of the prisoner, and that in all cases where a prisoner is undefended, the Deputy Judge Advocate is to take care that the prisoner does not lose any privilege that the law allows him in the conduct of the trial?—I consider it to be his duty to play as nearly as possible the part of a judge at common law, to the same extent that a judge at common law looks after the interests of an undefended prisoner.

2610. (*Chairman.*) What do you consider to be his power in the Court? Has he the power of controlling the Court in any way?—I consider that his decision upon any point of law or practice ought to be final.

2611. But only upon those points?—Not upon the result of the evidence, nor upon the magnitude of the punishment.

2612. Do you consider that if there were differences of opinion in the Court as to the mode of putting a question, that would rest with the Court to decide or with the Deputy Judge Advocate?—With the Deputy Judge Advocate.

2613. That is merely a point of practice and not of law?—I think it is very often a point of law.

2614. But supposing that the mode of putting a question was not strictly against law but against the practice of courts-martial, what would be his powers?—I think that under those circumstances the Deputy Judge Advocate would be the authority to decide.

2615. Supposing there was a dispute as to the mode of putting a question in the court, should you rule in favour of the Deputy Judge Advocate or of the President of the court-martial, and should the Deputy Judge Advocate interfere *proprio motu* to stop evidence which was being taken contrary to the rules of evidence?—I should say that the Deputy Judge Advocate was the person to decide as to the reception of evidence, and I think that it is the duty of the Deputy Judge Advocate, if any improper question is put, to interfere and say that that question ought not to be put.

2616. Do you understand that the Deputy Judge Advocate has power under what you just now read to address the Court?—I consider it to be his duty to address the court after the case is over, and to sum up the evidence.

2617. Then you would not, in accordance with the recommendation of the last witness, suggest that it should be the duty of the President of a court-martial to sum up the evidence?—No; I think that the Deputy Judge Advocate should sum up. I rather considered that the last witness referred to the Deputy Judge Advocate. There is no doubt that it is the duty of the Deputy Judge Advocate to sum up and not of the President.

2618. Has it always been the case, according to your observation, that the Deputy Judge Advocate has summed up?—I cannot say, for I have not been present, but since these regulations have been in force it has always been his duty so to do.

2619. You could not say whether that duty has always been performed?—I cannot say whether it has always been performed, but I have no doubt that the duty has been sometimes performed. It is a matter on which there is no doubt. The regulation is in these terms: "That at the conclusion of the case he "will sum up the evidence and give his opinion upon "the legal bearing of the case before the court pro-"ceeds to deliberate upon its finding." I do not think that it is a matter upon which there is any doubt, and so far as I know the practice is in accordance with the regulation.

2620. (*Capt. Vivian.*) Are the Deputy Judge Advocates selected from officers upon full pay by the recommendation of the Commander-in-Chief?—I do not think I could state that to be the practice. Whether those gentlemen were upon full pay at the time they were appointed or not, I could not say at this moment, nor do I say that they are selected on the recommendation of the Commander-in-Chief. I say that as a matter of fact in the case of the first appointments there was no particular officer of whom I had any special knowledge as regards fitness for this duty, and I took those gentlemen who were, in point of fact, recommended by the Commander-in-Chief; but I do not wish it to be at all understood that that is a permanent rule, and on the falling in of those appointments I am not prepared to say that the Judge Advocate-General should not at once re-appoint upon his own responsibility.

2621. So that in fact you know nothing about the legal qualifications of these officers for the important posts which they were going to fill, except what the Commander-in-Chief said of them?—I knew nothing more of them than what I heard from that quarter, and from communicating with them personally.

2622. They have responsible duties to perform, have they not?—They have.

2623. They have to advise the court as to points of law, and with regard to the receipt and rejection of evidence, and they should be officers well versed in martial law, should they not?—Certainly.

2624. Do you think it advisable that the selection should be confined entirely to officers of the army?—I think that it would be contrary to the feeling of the profession to do otherwise; but I do not know that there is any absolute necessity that it should be so. I think that if anybody other than a military man were appointed it would cause a considerable amount of dissatisfaction in the army, but I cannot give any other reason.

2625. Do you not think that it would increase the confidence both of the court and of the prisoner with regard to the legality of the proceedings if they knew that they were being advised by a man who was fully conversant with all the intricacies of the law?—I think that it would be found rather difficult to get anybody to accept an appointment as a permanent Deputy Judge Advocate out of the army, who would at the same time give the same degree of confidence.

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2626. That would be a question of payment, I suppose?—If you made the payment large enough, I have no doubt you would get gentlemen from any profession whatever.

2627. (*Lt.-Gen. Eyre.*) But is it not quite in the power of officers to qualify themselves for such an appointment?—There is no reason that I know of why they should not do so.

2628. Might they not do so very easily?—I do not know that it would be very easily done, because it would require a good deal of attention. There is no fatal objection to it; but I should wish to call the attention of the Commission to the 5th resolution, which is: "That the officiating Judge Advocate at a general "court-martial should represent the Judge Advocate-"General, should be deputed by him, and if possible "be selected either from officers who have passed "an examination in military law, or from barristers, "it being understood that when counsel are employed, "either for the defence or for the prosecution, "the officiating Judge Advocate should be a "barrister." So that these resolutions do provide for the case of a barrister being appointed a Deputy Judge Advocate for any very difficult case. If I were simply considering my own view upon the subject with respect to a very difficult and delicate case, I should like the Deputy Judge Advocate to be a man of great legal ability; and, in a case of that kind, if I were considering my own views upon the subject, I should not object to counsel being admitted on either side, and I think that if you admit the counsel to address the court, then you should have the court guided and assisted by counsel, or else you arrive at the evils which always exist when a court is inferior in power to the counsel who are practising before it; and, consequently, there is a difficulty in letting counsel address the court, and examine and cross-examine witnesses, unless you give the court a barrister also, to assist their judgment; but, in a very difficult and important case, I should like the court to be so constituted that a trial might as closely as possible resemble a great civil trial. The only objection to that is that it is against the feelings of the service, but I cannot say at this moment that I think there is any fatal objection to it. The Deputy Judge Advocates have done their work very well, and I should not like to make an alteration of that kind which would be distasteful to the army.

2629. (*Capt. Vivian.*) Have you any reason for saying that such an alteration as I have suggested would be distasteful in the service?—I think that the evidence which we have had before the Commission would be sufficient to show that.

2630. You fully admit and appreciate the importance of the position of those three gentlemen who are Deputy Judge Advocates?—Yes.

2631. And you think that they should be selected, whether from military rank or from civil rank for their knowledge of the law?—Yes.

2632. That is to say that if they had not that knowledge then their occupation is a failure?—If they are ignorant men of course it would be so. They might acquire their knowledge after their appointment, but the better the men you can get the better it is no doubt.

2633. An officer to make himself thoroughly qualified for so important a post would have to study hard, and to pass a very severe examination in the law, would he not?—Yes. I drew out a scheme of what I considered to be the proper books for an officer to read to qualify himself for duties of that kind.

2634. And you would recommend than an officer filling the post of Deputy Judge Advocate should pass a high legal examination?—I think so.

2635. (*Chairman.*) With regard to the conduct of cases in military tribunals, have you any suggestions to make with regard to the mode of prosecution before general courts-martial?—No; except as I have said that in a case of importance, I should not at all object to counsel being employed and addressing the court. With respect to inferior cases I do not think I have any suggestion to make other than that I think that the prosecutor should not be a witness in the case; but nothing else occurs to me at present.

2636. Have you had many cases brought to your notice in which prosecutor has been a witness?—I would not be certain, but I think it is not unfrequent. Sometimes he has only giving formal evidence. With respect to general courts-martial, I may say that a delicate question arises out of the time which intervenes between the decision of the court and the promulgation of the sentence. I do not see how that evil can be altogether obviated. I think it of great consequence that the Sovereign for the time being should exercise a personal superintendence over courts-martial, and so long as the Sovereign does exercise that personal superintendence, there must necessarily be an interval, but I think that the evil of that may be entirely obliterated, or made practically of no consequence. In the first place I understand that now the practice is that in case of acquittal the man is discharged within a very short time, that the matter is submitted to the Queen without a direct audience, and the consequence is that the man is discharged at once. Supposing a man to be found guilty, I do not see any reason why he should not be transferred at once to a military prison, and why the time should not count as part of his sentence, the only difference being that he should not be subject to anything more than confinement until the sentence was promulgated. It would be really for the benefit of the man, because he would get a certain portion of his sentence without hard labour. If that were done, and if the sentences were promulgated immediately after they were submitted to Her Majesty, then I think that the evils would be reduced to within a very small compass; but so long as the general courts-martial are submitted to the revision of the Sovereign, there must necessarily be an interval of some degree between the trial and the promulgation of the sentence.

2637. At present can a man who has been found guilty be given the punishment awarded to him until the sentence is confirmed?—He is kept in confinement, but there is no hard labour if he is sentenced to it, and he has the advantage that the time counts towards his sentence. There is no doubt that it is an inconvenient mode of imprisonment, and his being kept in the lock-up house, gives a great deal of trouble.

2638. (*Capt. Vivian.*) Do you see any reason why a court-martial should not, when they acquit a prisoner, at once announce the acquittal?—That would interfere to a certain degree with the theory of the Sovereign confirming every sentence.

2639. Do you think that so very valuable, that you would absolutely put an innocent man to the unjust infliction of perhaps 10 or 12 days imprisonment for the mere sake of keeping up this theory?—The decision of the court is not complete until it has been before the confirming authority whoever it may be.

2640. But with regard to naval courts-martial that is not so?—No, because the Crown does not confirm naval courts-martial.

2641. Therefore the only reason that you can give for maintaining this difference between military courts-martial and naval courts-martial is the necessity for upholding the prerogative of the Crown?—It is not accurate to say that it is the prerogative of the Crown, because it arises under the Mutiny Act; but it arises undoubtedly from the fact that the decision of the court is not complete until it has been confirmed by the confirming authority and the authority of the Queen arises under the Mutiny Act in the same manner as the authority of the confirming officer in other cases.

2692. (*Lt.-Gen. Eyre.*) Could the prisoner be under a kind of arrest at large as it is called?—I think it would be inconvenient, I think that the present system by which a man who is acquitted is released after some very short interval is the best one.

A man when he is convicted is handed over to the military prison authorities, and I do not see any serious evil in the present state of things subject to the man's going to a military prison.

2643. (*Capt. Vivian.*) Men are very often under the present system from circumstances which are frequently occurring, kept nine and ten days after they are acquitted, are they not?—I understand not.

2644. (*Mr. Whitbread.*) Do you think it desirable that the power should be retained of sending back a finding of acquittal for revision?—I think so.

2545. (*Capt. Vivian.*) On what grounds?—It is rather different with respect to general courts-martial but with respect to district courts-martial I do not think that where there is no Deputy Judge Advocate the court carries with it quite sufficient weight to make it advisable that there should be no power of revision afterwards.

2646. Would it not in your opinion be better to strengthen the court than to have a court so constituted that you cannot trust to its verdict of acquittal?—If you have on a district court-martial somebody in the sort of position of the Deputy Judge Advocate attending a court of that kind. I am not sure that then you might not leave it to the court without any revising assistance; but as it is at the present moment when the court has no assistance of that kind I should not be prepared to recommend that the decision of the court should be absolutely final.

2647. (*Chairman.*) Is there anything which you have to say especially with regard to regimental courts-martial?—No, I do not know so much about regimental courts-martial, because they do not come before me; but I agree with the view which has been taken by several witnesses, that it would be a good thing if the power of the commanding officer were rather increased; and I should not be sorry if regimental courts-martial were abolished. I very much doubt whether it is a good thing for discipline that something like an independent court should be formed within the regiment. I think it sometimes places both the commanding officer and the regimental court-martial in a false position towards one another; but as to whether it could be done or not I should not like to express a strong opinion.

2648. Do you understand the law to be now that a soldier, if he is dissatisfied with the punishment awarded to him by his commanding officer, can only appeal to a regimental court-martial?—I have not looked into that point, but I think that he can only appeal to a regimental court-martial.

2649. Do you think it advisable to extend that power to district courts-martial?—I do not think that it is material. I do not think that a man would ever appeal to a district court-martial.

2650. (*Lt.-Gen. Eyre.*) Would it make a difference in your view if the regimental court was conducted as it is now, but if the colonel should not hold the confirmation in his hand, but if it should go to a higher authority?—I think that there would be a difficulty about it.

2651. (*Mr. Whitbread.*) Do you agree with the last witness, that it would be desirable to abandon that power which the confirming officer now has of sending back the finding of a court-martial with a view to ensure a severer sentence?—I do not attach any great value to it, but I think on the whole that I should not be disposed to recommend the abolition of it. I have constantly had complaints made of the different magnitudes of punishment inflicted for the same crime by different courts-martial. You could scarcely have the punishments equalized (which is desirable, if possible) without some power in the revising officer to level upwards as well as to level downwards, and I have never seen in practice a case in which I thought any harm was done by the commanding officer sending back the punishment for consideration. I have known several cases where a commanding officer has sent back a sentence, and frequently the court have adhered to the sentence, and in some cases they have raised the sentence; but I never saw an instance in which I thought they raised it improperly. When it has been so, a sentence given has been decidedly below the average, and not sufficient according to the ordinary rules of the service.

2652. (*Chairman.*) Have you any other observations to make?—With respect to the writing down of questions, I consider it of very great consequence that there should be a complete record of the proceedings, because I do not know any other mode in which you could check great irregularities. Of course it is desirable to save trouble; and, therefore, with respect to the merely formal questions there is not the least reason why a printed form should not be drawn up which would save the trouble of writing down each of those questions, but I consider it to be of great importance that the record should be complete.

2653. (*Capt. Vivian.*) Why should it not be done by a shorthand-writer?—There is not the slightest reason why it should not. I think that is the best way, but the only objection to having a shorthand-writer is the expense, and sometimes the difficulty possibly in a remote region of getting a shorthand-writer. I do not see that it is necessary that the present practice should be adhered to of reading the question before it is put. It should be taken down by somebody, but there is no necessity for every question being submitted beforehand to the president to consider whether it is a proper question or not. But not only should every question that is put be written down, but it is of still greater consequence that every question which is refused should be recorded. I think that a great many more serious irregularities arise from the refusal of questions than from the putting of questions.

2654. (*Chairman.*) Have you had many instances before you in which you have had to decide that questions were irregular?—I have had more cases where evil has arisen from the refusal of questions, particularly in India, in cases where the practice of the stoppage of cross-examinations has been very serious, and I have had to upset courts-martial on the ground that the questions which the prisoner was clearly entitled to have put had been refused, and that produces a great denial of justice. The mere form of the question is not of very great importance, it is not sufficient to invalidate a regimental court-martial, although it is a thing to be made the subject of comment.

2655. In your office has it ever occurred to you to receive any remonstrances from the public against your decisions?—I cannot say that I ever recollect a case of the kind.

Adjourned to Thursday next at 12 o'clock.

Room E., House of Lords.

Thursday, 7th May 1868.

PRESENT:

COLONEL WILSON PATTEN.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
CAPTAIN THE HON. J. C. W. VIVIAN.
SAMUEL WHITBREAD, ESQ.
JOHN LLOYD WHARTON, ESQ., *Secretary.*

VERNON LUSHINGTON, ESQ., recalled and further examined.

V. Lushington, Esq.

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2656. (*Chairman.*) The Commission understand that you wish to add something to your former evidence; will you proceed to make any statement that you may consider desirable?—On the former occasion I was asked whether I had any suggestions to contribute, and I was anxious before I mentioned any suggestions that I should put myself in a right position by saying that generally speaking cases brought before courts-martial are so plain that the court can hardly go wrong; and I was also desirous to explain my deference as a civilian in expressing an opinion upon matters in which military considerations are of great consequence.

2657. Applying those remarks to the constitution of courts-martial, have you anything to add to your former evidence upon that point?—In the first place, with regard to some questions which were asked me, I think chiefly by the Recorder of London, as to the position of the Deputy Judge Advocate, I desire to say that I think the essential difficulty of the case lies in the fact that courts-martial have to administer law, and at the same time the court is composed of military officers who are not acquainted with law. It is important to state that, because I know that many officers have expressed a strong opinion that courts-martial ought not to administer law, but that they ought to be courts of honour. You will see that expressed in the clearest and most resolute manner by the late Sir Charles Napier in his very interesting book upon military punishments. Therefore, the first thing is to front that difficulty, as it seems to me that a court-martial, being a military tribunal, has to administer law, and the problem then is how best to furnish such a military tribunal with legal assistance.

2658. How do you propose to do that?—At present, so far as my experience furnishes a guide to me, I am well satisfied, as regards the constitution of the court, with the position of the Deputy Judge Advocate as a legal adviser to the court. He is attached to the Judge Advocate-General's office; he has many opportunities of communicating with the Judge Advocate-General and his Deputy upon matters of law. He also pays great attention to the military law and practice respecting courts-martial; he is also in cases of difficulty assisted by a barrister. Then when the trial takes place he sits at the right hand of the President and counsels him whenever legal difficulties arise. I can understand that it is a very real objection to say that on a trial by court-martial now there is a dual authority, namely, that of the President of the court and that of the Deputy Judge Advocate. In practice I do not believe the objection often becomes serious, but you will observe what is the alternative if you do not have a Deputy Judge Advocate as the legal adviser of the court; either the court must have no legal adviser, which raises, and must raise, a very great difficulty, or else the court must have the assistance of a barrister directly. Now I do not think that the direct assistance of a barrister would be consonant with the views generally entertained by military officers. I think, therefore, that the present system furnishes legal assistance to the court both with respect to civil and to military law in the manner which is most acceptable to the military tribunals.

2659. (*Capt. Vivian.*) Are you speaking of general courts-martial?—I am.

2660. (*Chairman.*) Seeing that you approve of such an arrangement on general courts-martial, do you see any means of applying that, even in a modified form, to either district courts-martial or regimental courts-martial?—I do not at present, unless in the military service there was established a corps of officers trained in military law, as exists in some armies, I believe in the Russian army and in the Prussian army; but of course I speak from very imperfect knowledge as to that; but I can conceive that a number of officers might be trained in military law and the law of courts-martial generally; and in that case it would be very proper to appoint one of those officers to every district court-martial; but I should hardly think it necessary to have a legal adviser in cases of regimental courts-martial.

2661. Would you suggest that certain officers of every regiment should be so far instructed in military law that they should themselves be able to take the place of the Deputy Judge Advocate on district or regimental courts-martial?—I should not like to offer an opinion upon that. Of course it would in the abstract be advisable, but there must be more important duties for officers to master, and there might be difficulties in making the arrangements for their education.

2662. (*Viscount Eversley.*) I understand you to say that you would have a Deputy Judge Advocate on district courts-martial as well as on general courts-martial?—It would have its advantages.

2663. Having a Deputy Judge Advocate should his decision upon points of law be final, or would you allow the majority of the court to decide?—I think that the present arrangement is perhaps the best,—a direction that his opinion ought to be conclusive without making it absolutely authoritatively conclusive. It is very difficult to say that the President should be, as to matters of law, bound by the opinion of the Deputy Judge Advocate, because the President and the court are the persons appointed to try the prisoner; but I think that the greatest deference, and practically complete deference, should be paid by the President and the officers of the court to the opinion of the Deputy Judge Advocate.

2664. (*Lt.-Gen. Scarlett.*) Then you would have that Deputy Judge Advocate of a certain rank, I suppose, and educated in a certain manner, because you could hardly expect a captain who might be appointed as Deputy Judge Advocate to give the law to a colonel of a regiment who was the President?—Quite so. I am at present confining my observations to general courts-martial; I am not prepared to offer any substantive proposal with respect to district and regimental courts-martial. It is perhaps necessary to insist with military officers that all courts-martial have to administer law; it is obviously so, I think, when it is fully considered.

2665. (*Chairman.*) You do not recommend, as I understand, that the Deputy Judge Advocate should act as President of the court-martial?—I think that proposal deserves consideration.

2666. But supposing that was the case, and sup-

posing that the Deputy Judge Advocate was a field officer, and the officer to be tried was a superior officer, what would be your view?—I think that would not do. I think in that case you must appoint a President of superior rank to the prisoner. In ordinary cases I don't see why the Deputy Judge Advocate should not be the president; but I only say that I think that is a suggestion which well deserves the consideration of the Commission.

2667. Would there not be some inconvenience in the Deputy Judge Advocate being the President of the court with a superior officer sitting at his side?—Yes; but then the Deputy Judge Advocate is now generally a full colonel, and probably that would be sufficient for almost all general courts-martial, or, at any rate, for all general courts-martial held upon private soldiers.

2668. Supposing that the office of Deputy Judge Advocate was made more extensive than it is at the present moment, should you think it desirable that the officers holding that position should all be of high rank in the army?—I do not quite understand what you mean by making the office more extensive.

2669. Supposing that it should be recommended that a Deputy Judge Advocate should attend district courts-martial, in your opinion would it be necessary that that Deputy Judge Advocate should be of so high a rank as you have just described?—I think you would not find the system work, unless he was a colonel, because in the case of a district court-martial you generally have a person of the rank of lieutenant-colonel as President.

2670. (*Lt.-Gen. Eyre.*) He would, in point of fact, be a fixed President?—Yes; I think that is a suggestion well worthy of the consideration of the Commission. There is one difficulty, I think, attaching to that. At present the Deputy Judge Advocate in difficult cases has the assistance of a barrister, and, if he was President of a court, I do not think he could so conveniently do that. At present you do in effect provide the court with legal advice; you have the Deputy Judge Advocate as adviser on military law; you have him assisted if necessary by counsel; and you have all legal points presented to the court in a manner which I think is agreeable to them.

2671. (*Capt. Vivian.*) Have you ever turned your attention to the question whether or not it would be advisable to establish fixed military courts, composed as they are now, but with a fixed judicial President, such as you describe, as Deputy Judge Advocate, well versed in law, to try all cases brought before them?—I have not sufficiently considered that point.

2672. Have you considered whether or not in different districts there should be fixed military courts composed of military officers sitting in permanence with a judicial head to try all cases brought before them?—I have not sufficiently considered that; but of course the present idea of the system is, that every officer should be qualified to sit upon a court-martial, and you would lose the benefit of that if you had a fixed court.

2673. (*Lt.-Gen. Eyre.*) The fixed courts in some continental armies are composed of a president for the year, and part of the members for six months, and the others for three months, so that there is a change occasionally. How do you view that?—I think that seems rather preferable to a court consisting entirely of fixed members.

2674. (*Capt. Vivian.*) My idea was not that the absolute members should be sitting in permanence, but that the court should be established with such a change as General Eyre now proposes,—that it should be a fixed court, the principal feature of which would be that the presiding genius of the court, so to speak, would be a man well versed in law?—I dare say that you would get some of your cases better tried in that way, but at the same time I think you would lose the education of the officers in very important matters.

2675. (*Maj.-Gen. Horsford.*) But it is the unattached services on which most of our army is always employed, only a small part of the army being occupied in England, and the officers would lose all opportunities of knowing what they might have to do in an isolated position?—No doubt.

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2676. (*Lt.-Gen. Eyre.*) If such a system were established it would be necessary to have the officers sitting as supernumeraries sometimes, would it not?—I should think so.

2677. (*Chairman.*) In the performance of your duties have you ever received any complaints of the mode in which courts-martial are conducted?—From time to time.

2678. Have those complaints been numerous?—I should say they have been very far from numerous, compared with the number of trials; but still the principal work of the office of course is to review errors, or suggestions of errors, in the proceedings of courts-martial.

2679. But I refer rather to complaints of the mode in which courts-martial have been conducted?—We do receive complaints from time to time, certainly, but general complaints are very rare. Of course nobody is in a position, except an officer of very high rank in command, to make any general complaint. We always have to deal with particular cases, but occasionally a correspondence is sent to us, perhaps from the Horse Guards, in which the views of military officers in high command appear in a more general form.

2680. Has an officer under trial any power at all of individually making any remonstrance or statement to the Judge Advocate-General upon the mode in which his case has been conducted?—In my opinion he has not. In my opinion the Judge Advocate-General is the adviser of the military authorities, and if any officer, whether under trial or not, has a complaint to make, he makes his complaint to his military superior, which complaint, we will say, is finally transmitted to the Commander-in-Chief. The Commander-in-Chief desires to be advised on the law, and he sends on the documents, including the original complaint of the officer, to the Judge Advocate-General for his opinion; but I do not think that the Judge Advocate-General has any original jurisdiction, so to speak, in the matter. He is simply an adviser called in by the supreme military authority.

2681. But my question had this object: to ascertain whether a prisoner under trial has the power of laying the case as he sees it before the Judge Advocate-General, either directly or through any other quarter?—He has that power in the indirect manner which I have mentioned. He would probably in his complaint request that the matter should be laid before the Judge Advocate-General; but it would come to us from the military authorities. I do not mean to say that we have not as a matter of fact occasionally received complaints direct, but I do not think it is usual to answer them directly, and you would see at once that it would be quite inconsistent with military discipline that we should do so.

2682. Are the cases numerous in which such communications have come to you from the officer under trial through the Commander-in-Chief?—The case of an officer being tried, as you are aware, is really a rare case. We have complaints from men who have been tried sent from time to time to us from the military authorities, but they bear quite an infinitesimal proportion to the number of cases tried. Those, however, are of course the cases which furnish work to the office.

2683. Do you think that the present system of the preparation of charges in the Judge Advocate-General's office is one which it is desirable to continue, or have you any alteration to suggest?—I see the objection to the present system plainly.

2684. What is that objection?—That, in the case of a general court-martial held in this country, the Judge Advocate-General settles the charges and in that respect performs the work of a prosecutor, and then afterwards, if a question arises as to the validity of the charges, he is the person to whose opinion the question is finally referred, so that he then acts as Judge, having previously acted as prosecutor. But I am not

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prepared at present to offer any remedial suggestion. If any other officer can be appointed in whom the Commander-in-Chief would have sufficient confidence to prepare the charges, that of course would be an improvement, but it is rather difficult to suggest who that officer should be, because it should be an officer well versed in criminal law, and also well versed in the ordinary criminal law of the army. The Commander-in-Chief must have the very best of advice on these points, or otherwise justice may miscarry in very serious cases. Then another difficulty in making any alteration is this: that the same difficulty presents itself everywhere, in every colonial command for instance, and in India, so that you would have to provide an officer in each place to prepare the charges. I think it is a matter, if I may say so, which is well worthy of the consideration of the Commission, but I am not myself prepared positively to recommend any alteration.

2685. (*Lt.-Gen. Scarlett.*) That would entail a number of appointments and a very considerable expense, would it not?—It would entail a considerable expense and with only occasional work. I think on the whole you will find that you must trust to the impartial conduct of the Judge Advocate-General in the matter, although it is rather a difficult position for him to fill.

2686. (*Chairman.*) I believe that there is this difference between a trial before a court-martial and a trial in criminal courts, that if in the criminal court a prisoner pleads guilty his plea is admitted at once without going into the case?—That is the case.

2687. That is not so I believe in courts-martial?—No. By a paragraph in the Queen's Regulations in such cases the court is required to take evidence on oath in the usual manner.

2688. Can you give any reason why there should be a difference between a court-martial and an ordinary court in that respect?—The reason of that regulation is that the revising officer may have the means of fully judging of the circumstances of the case; but that does not seem to me to make it necessary. I myself think that it would be as convenient if the same practice were followed as is followed in the ordinary criminal courts, viz., that where the prisoner pleads guilty, a statement should be made by the prosecutor as to the circumstances of the case.

2689. Is it the case that in a criminal court the prosecutor makes a statement in court if the prisoner pleads guilty?—Yes, that is the ordinary practice. The prisoner pleads guilty, and then the court requires to be informed of the nature of the case. Of course it has the depositions also, but the counsel for the prosecution speaks.

2690. (*Lt.-Gen. Scarlett.*) The punishment is awarded according to the evidence in a court-martial, is it not?—Quite so; it is awarded upon the charge and the evidence.

2691. As explained by the evidence?—Quite so.

2692. (*Mr. Headlam.*) Is it not the case in trials before the civil tribunal that no witnesses are sworn when the prisoner pleads guilty?—No one is sworn then.

2693. Is not the real difference that in a civil case witnesses are sworn, and that in a military trial witnesses are not sworn?—Quite so.

2694. (*Capt. Vivian.*) But in a civil court they have the depositions before them, whereas in the military court they have nothing at all?—Yes. I do not wish to press for an assimilation of the practice of courts-martial to that of the civil courts, but I do not myself like the present position with respect to the plea of guilty, because no one can say exactly what the meaning of the plea of guilty is. In a civil court the plea of guilty is conclusive, and no evidence whatever is required; but in a court-martial you are required to take evidence, and then the question continually comes up to us whether under the circumstances the finding of guilty which follows and the sentence can be justified. There is some flaw in the evidence—then what is the value of the plea of guilty? We have nothing to guide us.

2695. Have you ever known a case where a prisoner has pleaded guilty, and then has been acquitted on the evidence?—Certainly; but it is not a very common thing. It more commonly happens the other way; a man pleads guilty and evidence is taken, and the court finds him guilty, and then our opinion is taken as to whether the court have done right in finding the man guilty. If the plea of guilty is enough, what do you want the evidence for? If it is not enough, then must you not take evidence to precisely the same extent as in an ordinary case?

2696. Have you ever known an instance of a soldier pleading guilty for some object when he has not been guilty?—Yes; in cases of desertion.

2697. You think that soldiers are in the habit of pleading guilty to one crime which they have not committed for the purpose of escaping punishment for another which they have committed?—I do not think it is a common case.

2698. But does it ever happen?—I have no doubt that they sometimes plead guilty when they are not guilty.

2699. Have you ever had a case of that kind brought home?—I think so, certainly. There was one instance which was quoted before the Commission the other day of a man who was tried for making a false and frivolous complaint to his commanding officer.

2700. But you think that it is not confined to one instance, but that there are several instances where a soldier has pleaded guilty when he is not really guilty?—There are some such instances; but the purport of my present observation is this: that neither the court, nor the confirming officer, nor the Judge Advocate-General can say at present what really is the legal effect of the plea of guilty; whether it is enough in itself to justify the finding of guilty, or whether any, and if so how much, evidence is required in order to confirm the plea.

2701. Have you sufficient experience of the criminal law to be able to point out any difficulty which has arisen before the civil tribunals from the plea of guilty being taken by the court as a matter of course?—I should say that it was a very reasonable system to act upon the plea of guilty; but at the same time, I know that some persons are of opinion that in all cases the crime should be proved.

2702. (*Capt. Vivian.*) Do you suggest, then, that the same practice should prevail in military courts as now prevails in the civil courts with regard to the plea of guilty?—What I should prefer would be, that in all cases the plea of not guilty should be entered, and that evidence should be taken, and then I think the soldier, when he is called upon for his defence, may admit his guilt with any expression of contrition which he may think fit. That, I think, would really be a better plan; but after all it is not a matter of great importance, and I only wished to mention the subject, because it is one on which we occasionally have difficulty, inasmuch as neither the court, nor the confirming officer, nor ourselves can lay down any clear rule with respect to the effect of the plea of guilty.

2703. (*Maj.-Gen. Horsford.*) Would you ask the question whether the prisoner is guilty or not guilty?—I would not; I do not see any advantage in it. That question very often involves difficulties both of law and of fact.

2704. (*Lt.-Gen. Scarlett.*) Have you known any cases where men have pleaded guilty, and where the evidence has not been sufficient to confirm their guilt?—Certainly.

2705. And where, if they had not pleaded guilty, they would have been acquitted?—Upon that evidence, certainly.

2706. (*Chairman.*) Can a prisoner before a military tribunal put forward any other plea than that of guilty, or not guilty?—It is supposed that he may plead in bar of trial.

2707. Is that quite decided?—I have never known a man escape a trial by pleading or trying to plead in bar of trial; but I think I have seen frivolous attempts made sometimes in order to bar trial. I should myself propose that no pleas in bar of trial should be allowed. I believe that, in the ordinary criminal law, there are three pleas in bar of trial, *autrefois acquit*, *autrefois convict*, and *pardon*.

2708. What is the plea of pardon?—If a man proves pardon by the Crown. It is very inconvenient to enter into proof, certainly, of either of the two first pleas, because to show that a man has been either acquitted or convicted on a former occasion, you must show that that charge was the very charge for which he is now going to be tried, and that may be a matter of extreme difficulty, and may involve your necessarily going into all the circumstances of the case.

2709. In the case of a second trial for habitual drunkenness, would you deprive a man of the power of saying that one of those cases of drunkenness came under consideration at a former trial?—Not at all. I think that he ought to be allowed to say it, and to prove it; and, if he proves it, I think the court ought to acquit him of the principal charge.

2710. But he would put that forward in bar of the present trial, would he not?—He might, I suppose.

2711. Why should he not do so?—For this reason, that in order to prove that plea in bar of trial he probably would have to show precisely what is the matter for which he is brought to trial on the present occasion, which may involve his going into evidence on the whole case. I think that it would be better to try a man and let him state anything he likes and prove anything he likes, not manifestly irrelevant, in his defence; and let that be taken into consideration by the court and by the revising officer.

2712. You do not think that a prisoner would be deprived of a material circumstance in his favour by the course you suggest?—I think not, because I would allow him to state it and to prove it.

2713. Is the plea in bar of trial a frequent one?—Not at all; but at present it furnishes an opportunity for embarrassing the court. I have an instance in my mind, in which the prisoner I think put forward six or seven reasons at least why he should not be tried, not one of which was a good one. It is very difficult for a court-martial, a military tribunal, to judge of matters of that kind.

2714. On a former occasion you gave evidence with regard to the mode of conducting the prosecution, and you gave an opinion with regard to counsel being permitted to address the courts-martial; do you wish to add anything to the observations which you then made?—At present you are aware that counsel are permitted to be present, assisting both prosecutor and the prisoner with their advice; for instance, they may suggest what questions shall be asked; they may suggest objections to be taken to any question; or they may suggest the grounds of argument upon which questions may be maintained, all of which at present is done in writing. What the counsel, in fact, wishes to say is put in writing by the prosecutor, or by the prisoner, and is then submitted to the court. I know that there is a very great objection to a counsel's voice being heard in a court-martial, and at present it is not allowed; but speaking as a civilian with great deference to military experience and military conviction, I myself think that it would be better that in the few cases where counsel do appear, they should be allowed to do their work just as they do in other courts. In a great case like Colonel Crawley's case, or Captain Jervis's case, counsel are present doing their utmost to embarrass the court and put them into difficulties, and yet, at the same time, by not permitting them to speak, you really do deprive both the prisoner and the court of most valuable assistance which counsel may give. I am not aware of any objection that has been raised to counsel being allowed to speak in the ordinary manner, except the suggestion that a counsel for the prisoner will prejudice a court against a prisoner; but I do not think that ought to be so. Of course a prisoner might suffer occasionally by an indiscreet line being taken by his counsel, but there ought not, I think, to be any prejudice against a man simply because he has a counsel, and I think practically there would not be any. At present you have the counsel there, and you put into his hands, if he is counsel for the prisoner, power to embarrass and perplex the court; and by the system which you adopt you require all this to be done in a very cumbrous and tedious and round-about manner; whereas if the counsel was speaking in the ordinary direct manner, I think you would get his assistance in the best and most convenient way, and I do not think that you would really find that it would at all impeach the military character of the tribunal.

2715. I suppose that admitting counsel to act in courts-martial as they do in the civil courts would tend very materially to lengthen the proceedings?—I think not.

2716. Not if a counsel is allowed to address the court?—I think not; I think it would greatly shorten the proceedings. No doubt there is a great difference between a case where a man is not defended by counsel and one where he is defended by counsel; the latter takes the longer time, but where the prisoner is defended by counsel I think the trial would be more expeditious if the counsel were allowed to address the court in the ordinary manner than if everything was to be done in writing according to the present system. One of the great delays which at present occur on an important trial is the delay which is granted for the preparation of written addresses.

2717. But supposing a regiment is quartered in a district where the prisoner has not the means of getting any but very second-rate counsel or a solicitor on his behalf; would not that solicitor, being totally unacquainted with the nature of the court, be likely to lengthen the proceedings?—Very slightly, I think. Take the ordinary case in which a private is tried for stealing; if he employed a solicitor, that could not lengthen out the case very much

2718. (*Capt. Vivian.*) The legal adviser is allowed to be present now, is he not?—He is.

2719. And, therefore, so far as delaying the proceedings of the court is concerned, he has every opportunity of delaying them now?—Yes; and much more than he would otherwise have.

2720. Would you confine this privilege to general courts-martial?—No, I would allow any prisoner to be defended by counsel.

2721. Either before a general, a district, or a regimental court-martial?—Yes, before any court-martial, I think.

2722. With regard to the written questions, would you recommend that all questions should be taken in writing under those circumstances as they now are?—I am very strongly against that; I really see no essential advantage in it.

2723. (*Chairman.*) You stated in your former evidence that you thought that where a shorthand writer was employed the taking down of the questions and answers by the president or by the Deputy Judge Advocate was unnecessary; would you make any further remark on that point?—Yes, I will now take the case in which no shorthand writer is present; I think I described to the Commission on the former occasion what the present practice is, viz., that everything is done in writing. The prosecutor's question has to be written out by the prosecutor; it is submitted to the president, and is by the president then written down and recorded in the proceedings; it is then put by the president to the witness. That is the ordinary practice at present. You must see that a great deal of time is consumed by that process. Now I cannot see why it should not be sufficient for the president to take just such a note of the proceedings as is now taken by a careful judge, that is to say, that instead of recording the question and answer, he should always record only the answer of the witness, except in cases where the question was of a

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peculiar kind requiring to be specially recorded. I can understand the objection that may be taken to this course: it is, that first of all the officers who preside at courts-martials are not always very experienced men in trying cases, and that their duty in recording the proceedings ought to be as simple as possible. But I don't think although that is to some extent true that their inexperience would be found of nearly as much consequence there as with respect to the graver functions which they have to perform in trials. It is not a difficult thing after all to take a tolerably good note of evidence. Secondly, I think that the revising officer does not really require extreme minuteness of detail in the evidence; he requires of course the substance of the evidence, and in cases where the exact words used are material, he requires the exact words, but, generally speaking, what I would call photographic minuteness is not needed for the purpose of revising the proceedings of a court-martial. I think, therefore, it would be altogether better if the record of the proceedings of the court were something more nearly corresponding to a judge's note elsewhere; it seems to be the natural course, and I should think it would be the most convenient one. It is a great objection to the present system of courts-martial, as it seems to me, that the whole process is so tedious. A judge's attention ought to be always on the quick, and if the process is tedious I do not think the work can be so well done. Then this must be said, that even at present under the very strict rules for recording the evidence you do not have an exact account of what took place. Nobody can supply that except a shorthand writer.

2724. In the Judge Advocate-General's office have any cases occurred which lead you to suggest any alterations in the power of the revising officer?—On the whole I am not prepared to make any suggestion with respect to that. I think that the revising officer ought to be very forbearing in calling upon the court to reconsider their finding upon a question of fact, because if the court are not competent in the first instance to do that, I do not think they ever will be competent. But it appears to me that it is very convenient that the revising officer should be able to call upon them to reconsider their finding upon a question of law, and that he also should have the power of moderating their sentence. The delay thereby occasioned is very trifling, and in that way you get the advantage of the judgment of a superior officer who has the command of a large body of troops in the district, and who thereby brings the sentences more or less to a uniform and equable character.

2725. (*Capt. Vivian.*) But you would not allow the court to be re-assembled for the purpose of increasing the punishment?—I do not object to it.

2726. (*Mr. Whitbread.*) You used the word "moderating" instead of "mitigating" just now, did you not?—Yes, but I did not intend it to have that meaning exclusively. I do not see any objection to the revising officer in certain cases re-assembling the court for the purpose of increasing the punishment. Of course the revising officer exercises a severe power of that kind with considerable reluctance, but it is not at all an uncommon thing to see it done.

2727. (*Maj.-Gen. Horsford.*) He would give his reasons in full, would he not?—Yes. A revising officer on those occasions, I think, makes generally some remark in his minute, such as, "This is a very serious crime," and that he considers the punishment inadequate, and he requests the court to reconsider their sentence.

2728. (*Mr. Whitbread.*) Do you go so far in your opinion as to approve of sending back a finding of acquittal?—I said just now that I think the revising officer ought to be extremely reluctant to ask the court to re-consider their finding on a mere question of fact. The finding sometimes involves a question of law, and if the revising officer has reason to think that the court has gone wrong on the question of law, of course he will at once send it back. An instance occurred the other day, where an act was charged to be done, we will say, on the 9th of December. The evidence proved the act to have been done upon the 8th of December. The court acquitted the man, and the revising officer wrote to us to know what he should do. We recommended him to re-assemble the court, and to inform them that the error in the charge as to the date was not material, if the prisoner was not thereby prejudiced in his defence.

2729. Would you recommend a similar proceeding to a court which had the assistance of a Deputy Judge Advocate upon the questions of law which might come before it?—Yes, I should do so. I should say that made a difference in degree, but not in kind. It is very rarely indeed that a general court-martial is re-assembled in England.

2730. (*Chairman.*) It has been suggested that all the proceedings of district courts-martial should be sent to the Deputy Judge Advocate of the district for examination before they are confirmed, in the same way as the proceedings of general courts-martial are sent to the Judge Advocate-General; have you any opinion to offer upon that point?—Yes, I have a very strong opinion that it would be advisable that the proceedings in all cases should be revised by the Deputy Judge Advocate of the district before they are submitted to the confirming officer for his confirmation, because thereby mistakes may be set right in time. That is the course which is adopted in India. I believe that all cases there go to the Deputy Judge Advocate of the district, and I believe that practice also prevails in Manchester, but otherwise it is not the case. The Commission will see the importance of that with respect to the foreign courts-martial. We do not get those until months after the man has been tried, and of course all we can do is, either to advise that part of the punishment should be remitted or that the whole of the proceedings must be quashed; but it would have been a great advantage if, before the confirming officer had confirmed the proceedings, they had been submitted to the opinion of the Deputy Judge Advocate, who would have had brought to his notice any mistakes which might have been made, and he might then have ordered the court to be re-assembled, and the whole thing might have been put right, instead of a miscarriage of justice taking place.

2731. But would it be possible always to do that in India?—I believe it is invariably the case.

2732. And you suggest that it should be done in the same way in England.—In England, and also I would say in the colonies. There is no standing Deputy Judge Advocate in most of the colonial commands, and I should suggest that it would be very advisable to appoint an officer, if not with that title, at any rate with that duty. At present, as the Commission are doubtless aware, what is done is this, that the proceedings come in to the confirming officer, they are then read by an officer on his staff, I do not know that any one is specially detailed to do it, and the general officer then writes his confirming minute.

2733. (*Lt.-Gen. Scarlett.*) The general officer reads them himself?—No doubt he does, but at the same time he has other very important duties to do, and to some extent a general officer must trust his subordinates in matters of such minute detail as the revision of the proceedings of courts-martial necessarily involves. I think it would be well to have an officer specially charged with that duty.

2734. (*Chairman.*) At the same time it appears by former evidence that there is some little complaint of the delay which takes place between the sentence and the confirmation of the sentence; would not that increase that inconvenience?—Yes, there would be some delay, but I think there would be a very slight delay.

2735. How are the Deputy Judge Advocates generally situated in England for instance?—Colonel Laye resides in London, Colonel Meir resides in Manchester, and Colonel Nugent resides in Dublin. I should say a day's post would always be quite enough.

2736. But would not the consideration of the finding require some time?—I think it would very seldom require more than a day's post.

2737. And thence it would have to go to the confirming officer, would it not?—Yes; and he would make his confirming minute.

2738. Have you any knowledge of the average time that it requires for the finding of a court-martial to be confirmed by the revising officer in the case of district courts-martial in England?—That is rather a difficult question to answer. Sometimes the proceedings are confirmed on the same day, and sometimes two or three days afterwards.

2739. In case it takes two or three days, is it not natural to suppose that the same time would be required by the Deputy Judge Advocate?—I think not. I see a great number of those proceedings, and I think it would be a very unusual instance in the case of a district court-martial in which I could not give my opinion the same day.

2740. Then it would appear that at the present time the proceedings come to be submitted to the Judge Advocate-General after they have been confirmed and promulgated?—Yes; and sometimes months afterwards, after everything has been done, and even after the sentence has been entirely carried out.

2741. And you think that it is desirable that that stage should be gone through before the confirmation takes place?—I do. I think the best proof that can be given of its advantage is that it has been tried with success in India for some time. I remember that Sir Sidney Cotton once when he was commanding in Manchester came and asked me whether the same thing could not be done here in England, and he spoke with great approbation of the system in India, and I believe he it was who introduced the same system at Manchester.

2742. (*Capt. Vivian.*) Does that system prevail now?—It prevails at Manchester, I believe, at the present time.

2743. (*Chairman.*) But the commanding officer at Manchester is commanding over a very large district of country; he commands at York for instance. Would a court-martial held at York be sent to the Deputy Judge Advocate of that district previously to going to Manchester?—I believe so.

2744. Do you know where the Deputy Judge Advocate of the northern district resides?—In Manchester.

2745. (*Capt. Vivian.*) Do you see any reason why a sentence of acquittal should not be pronounced at once before it goes to the revising officer or to the confirming officer, supposing the prisoner is tried upon a charge and acquitted?—I should have no great objection to that. I think there would be a few rare cases, such as those which I have mentioned, in which the acquittal is wrong, and in which upon the suggestion of the revising officer a more correct finding might be come to by the court, but there are very few such cases, and I think they may be disregarded, if necessary.

2746. You think they might be disregarded in consideration of the great injustice that would sometimes be done in keeping the prisoner for some time confined?—Quite so.

2747. (*Chairman.*) I understand that you wish to make some further observations with regard to the constitution of courts-martial for the trial of officers. Will you proceed to make those observations?—I think it right to say that I have seen official complaints by some officers in high command that it is difficult to get courts-martial to do their duties quite satisfactorily when an officer is on his trial. Of course there are few persons really in a position to form an opinion upon such an important matter; but I speak now from what I have seen stated by Sir William Mansfield in a minute, and also from some remarks made by Lord Strathnairn when Commander-in-Chief in India; you will also see it very fully instanced in the life of Sir Charles Napier, written by his brother.

2748. Are those minutes to which you allude minutes which have come into the Judge Advocate-General's office officially?—The way in which the matter came before me was this, there was a minute of Sir William Mansfield which came before us officially, and attached to this minute were the observations of Sir Hugh Rose, I think, in the case of two or three general courts-martial held in India.

2749. What was the nature of those observations to which you allude?—It was simply this, that officers were not willing to do their duty towards an officer on trial with the same strictness as towards a private soldier, and great complaints were made by those general officers whom I have mentioned.

2750. (*Mr. Mowbray.*) That letter of Sir William Mansfield's was written after the verdict in a particular case, was it not?—It may have been so, but I do not think it made any special reference to that case.

2751. (*Capt. Vivian.*) Did Sir Hugh Rose confirm those remarks of Sir William Mansfield's?—Sir Hugh Rose's remarks were before Sir William Mansfield's. You will see the matter enlarged upon in Sir Charles Napier's life, and I think that there was a general order by Sir Hugh Rose; but I cannot pledge myself to that, because it is some time ago since I read the minute.

2752. (*Chairman.*) Do you recollect what was the nature of the order?—I believe it was a general order complaining of the manner in which courts-martial declined to act with due severity in the case of officers under trial.

2753. Did it apply generally, or to one particular instance?—It applied to several instances.

2754. Did it state any particulars?—There were several instances quoted. There was one which made an impression on my mind as I read it, which was the case of an officer who was tried for offering an insult to some Mahomedans in some mosque, I think at Cairo; but however, there were several cases, and Sir William Mansfield concluded with a suggestion that courts-martial for the trial of officers should consist only of officers considerably senior in rank to the accused.

2755. But that would be in opposition to the practice of military courts in every part of the world, would it not?—I cannot say that.

2756. You do not know the constitution of military courts in other countries?—No, or very imperfectly indeed.

2757. You are not aware that England is the only country in which the rank of the officers composing the court must be equal to that of the person tried?—I was not aware of it.

2758. Do you not think that it would have rather a bad effect to go in the opposite direction to that?—I think that it is essentially a military question, and I do not myself offer any opinion upon it. As regards the doctrine of condonation, perhaps I may be permitted to say that I think that that sometimes occasions great embarrassment. The old doctrine, which probably arose from active service in the field, was that when a man who was under a charge was put to perform any duty, such performance of duty by permission of superior authority absolutely condoned his offence. That has been to some degree limited, and in the present edition of the Queen's Regulations a considerable change has been made in that respect, at any rate as to private soldiers. It is now held that putting a man to duty shall not absolutely condone the offence, but shall be recorded in the proceedings if the prisoner chooses, and shall be taken into account by the court and by the revising officer; but the difficulty still remains with respect to officers, and the question often arises: What amounts to condonation? What kind of service or permitted service really frees the prisoner from liability to trial and punishment?

2759. But at the present moment there are only two cases, are there, the one being absolute condonation and the other being ordered to perform some duty; is there any other mode of condonation except those

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two?—It is a most peculiar doctrine, and it belongs to the military service only. I believe it does not exist in the naval service; they cannot afford to have such a doctrine there, because if an officer has misconducted himself, he must nevertheless do his duty; you cannot supply his place on the high seas.

2760. (*Lt.-Gen. Eyre.*) Can you see any sense, or use in that doctrine?—I think not; I can quite understand that if a man has fought a battle for you, you ought not to try him afterwards; but I do not like its being an absolute doctrine that the performance of any duty after an offence is committed should be a condonation of the offence.

2761. (*Chairman.*) Could you point out, either in the Articles of War or in the Queen's Regulations, where that doctrine is laid down?—It is No. 349 of the Queen's Regulations, at page 84, "A soldier charged "with committing an offence should be put in con- "finement as directed by the Articles of War, and ought "not to be permitted to perform any duty whatever "(except carrying his own arms and accoutrements "in marching) until his case is disposed of. If, "however, by error such an offender has been per- "mitted to perform any duty, he shall not thereby be "absolved from liability to punishment for his "offence; but may, if the proper authority shall "think fit, be summarily punished or be brought to "trial before a court-martial according to the circum- "stances of the case."

2762. But that meets your case, does it not?—It does as to private soldiers; but I think you will see that it does not apply in terms to officers.

2763. But is the doctrine applied to officers?—The doctrine of condonation generally is certainly applied to officers.

2764. Invariably?—Invariably.

2765. Is the being ordered to perform an act of duty on the part of an officer considered as condonation?—It is considered as condonation.

2766. (*Mr. Headlam.*) The performance of the most trifling duty would be the most complete condonation for the greatest crime?—It might almost be stated so.

2767. (*Lt.-Gen. Peel.*) Is that the only order which refers to this condonation?—That is the only order; but the condonation itself, I think, rests upon the ancient custom of the service, and I imagine it arose from this, that in active service, when a man had misbehaved himself, if an action was imminent, you required his services, you let him out and he fought for you, and after that it was thought to be hard and improper to bring him to trial.

2768. Do you suppose that that passage in the Regulations would apply to officers?—That would be rather a stretch of it; but it might possibly be applied to them.

The witness withdrew.

WILLIAM GEORGE GRANVILLE VENABLES VERNON HARCOURT, Esq., one of Her Majesty's Counsel, called in and examined.

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2769. (*Chairman.*) You have had some experience with regard to courts-martial, have you not?—My experience is limited to one particular instance, which was the court-martial, with which the Commission are probably familiar, upon Colonel Crawley. That was a court-martial which perhaps may be considered more or less an exceptional court-martial no doubt, because it was a court-martial I suppose which was the result of a want of public confidence in the general system of courts-martial, and it was a sort of court-martial upon a court-martial as it were, which was conducted, I suppose, for the purpose of carrying on, more or less under the supervision of public opinion, a court-martial because the public thought that they had some reason to distrust the system under which courts-martial were conducted; and in that respect perhaps it was an exceptional transaction. That is the only case with which I am familiar.

2770. I believe it lasted for some time, did it not?—It lasted for several weeks and many days.

2771. And you, I believe, were the legal adviser of the prisoner?—I was so.

2772. In the course of advising upon that case, did any suggestions occur to you which you could make for the alteration of the present system of courts-martial?—In answer to that question I may say that certainly some of the objections which are popularly urged against courts-martial seem to me to be unfounded. I thought that the system of conducting proceedings before courts-martial was far less open to objection than I had supposed. There is a popular prejudice, no doubt, against the process of questions being delivered in writing, and I, with a good many other people, shared the opinion that it would be quite impossible to elicit evidence and to conduct cross-examination by that process. I certainly did not find that at all. It no doubt took a longer time than would have been taken under ordinary circumstances, but it seemed to me in a considerable degree to be a protection to a court which is not versed, as the courts of Westminster Hall are, in the laws of evidence; because it is quite plain that the court might be very much at the mercy of the legal advisers on either side. In the courts in Westminster Hall we know very well that if a counsel asks a question which is improper he will be stopped at once by the judge; but that is a thing which with an unlearned court would not occur to the same extent; therefore I did not feel the weight of that objection; but there were other objections in that court-martial which I did feel very strongly. The form of taking evidence did not seem to me to be so objectionable as I had supposed.

2773. Do you think that the present system of putting down the questions in writing is a favourable one for the prisoner, and that it affords any more protection to him than an examination *vivâ voce*?—I do not know that my opinion would apply to that at all. It seems to me that it is some protection to an inexperienced tribunal against improper questions being put; that is to say, that the court have time to consider before the words have escaped whether or not the question which is propounded is one which ought to be put; but subject to what I propose presently to say with reference to that, I think there might be alterations made which would do away with the necessity of any such regulation.

2774. (*Lt.-Gen. Peel.*) That was a general court-martial, was it not?—It was a general court-martial.

2775. Was there somebody present from the Judge Advocate-General's office on that occasion?—Yes; the circumstances were very peculiar in that case.

2776. A question being submitted in writing to the president of the court, he submitted it, did he not, to the Judge Advocate before it was decided whether it was a proper question or not?—I forget whether he always did so, but he certainly did so sometimes.

2777. The protection is to the court in fact, is it not?—It is to the court.

2778. The court is protected by the question being written, because they have an opportunity of submitting that question to the Judge Advocate before they decide whether it shall be read or not?—No doubt that is so.

2779. (*Lt.-Gen. Scarlett.*) But do you think it a protection not only to the court, but to the prisoner?—It may operate in either way. The improper question might be either for or against the prisoner. It is giving time, in point of fact, for the court to consider; a time which is not necessary where you have an experienced tribunal.

2780. (*Mr. Mowbray.*) It is also giving time for the witness to consider his answer, is it not?—The witness is not acquainted with the question until it is propounded.

2781. But the time which is occupied in framing the question gives time to the witness to consider what his answer may be for one question?—No doubt, from the bearing of the previous question.

2782. (*Capt. Vivian.*) In the case of a prevaricating witness under cross-examination, the delay might be inconvenient, might it not?—No doubt; you cannot follow him up with the same rapidity as in a court of common law, but practically I do not think that I found much disadvantage from that.

2783. (*Chairman.*) You do not attach much importance to that?—I do not attach much importance to it. With regard to that court-martial there was what I supposed was an extraordinary practice, but which having referred to it I must notice, in order that it might never happen again. The gallant General has asked me whether the questions were referred to the Judge Advocate to be approved. The Deputy Judge Advocate was a military person and not a legal person; but the Deputy Judge Advocate-General, who was a legal person, was acting in that case as adviser of the prosecution. Now I imagine that that was quite an exceptional case, but that seems to me to be a proceeding contrary, so far as I understand, to the first notions of justice, because if any question arose as between the prisoner and the court as to the propriety of a question being put, or as to evidence, the person who was advising the prosecution was a member of the same department which had to decide finally upon the evidence. It was as if in a prosecution by the Crown the Attorney-General was the Judge, while the Solicitor-General was the prosecutor, and as if the Solicitor-General having put a question to which the prisoner's counsel objected it was to be referred to the Attorney-General to decide whether the question ought or ought not to be put. That was what actually occurred in that court-martial. I do not know whether that is the general practice of courts-martial, but it seemed to me to be a violation of the first principles of justice.

2784. Will you describe to the Commission what part the Deputy Judge Advocate and the Deputy Judge Advocate-General took in that court-martial?—I take it that it was a very anomalous transaction altogether. There was an acting Judge Advocate, who was Colonel Pipon, who was nominal adviser of the court.

2785. Where did he sit?—He sat by the president. Then there was a nominal prosecutor, a gallant general who is on this Commission. Then there was the real prosecutor.

2786. Where did the Deputy Judge Advocate-General sit?—The Deputy Judge Advocate-General was in point of fact the adviser of the prosecution, the nominal prosecutor being General Sir Alfred Horsford; the Deputy Judge Advocate-General was advising him, and then when any question arose between the prisoner and the prosecutor, the prosecutor was advised by the Deputy Judge Advocate-General, and the ultimate decision of the question at issue was referred to the Judge Advocate-General, who was the final adviser of the court-martial as to whether or not the question should be put. Therefore in point of fact the prisoner was placed at this disadvantage, that the Deputy Judge Advocate-General advising the prosecutor had, as his ultimate court of appeal between him and the prisoner, the Judge Advocate-General, who in point of fact did advise (on one occasion certainly, if not on more than one occasion,) against the prisoner and in support of the Deputy Judge Advocate-General, who was advising the prosecution; that is to say in point of fact the parties advising the prosecution were the ultimate court of appeal between the prosecutor and the prisoner.

2787. Will you state who framed the charges on that occasion?—I cannot say personally. The charges were framed in the Judge Advocate-General's office. The Deputy Judge Advocate-General was the practical prosecutor, and for all legal questions the Judge Advocate-General was the judge, and a more extraordinary confusion, according to legal ideas of the relations between a prosecution and the parties who were to judge of the prosecution I cannot conceive.

2788. You were retained by the prisoner, I understand?—I do not believe that that would be a correct military phrase. I was "the prisoner's legal friend;" I believe that is the proper phrase.

2789. Had you the power on his behalf to raise the objections which you now raise to the Commission?—No, I could raise nothing of course. What I did was to object to a question, or I proposed to put a question, and then the prosecutor objected to my question, or insisted on his own. Then I knew that the decision upon those objections was to be referred to the very department who were conducting the prosecution.

2790. But my question had a different object; at any part of those proceedings do you hold that you had not the power to raise that objection which you have just now urged to this Commission, viz., that the duties of the Deputy Judge Advocate-General and of the Judge Advocate-General clashed?—I do not see how I could have raised it. There was no legal form in which I could have raised it. We felt the pressure of it extremely, and we felt that the form in which the trial was conducted was an extreme hardship upon the prisoner, but I would not say for one single moment that it was not dealt with with the greatest fairness.

2791. (*Lt.-Gen. Peel.*) But could not the prisoner have raised the objection upon your advice at the time?—I do not see in what form it could have been done. Who would have decided upon the objection? The Judge Advocate-General?

2792. The question is not who would have decided it, but as to raising the objection. Could not the prisoner, upon your advice, have objected to certain questions being put?—Yes, I proposed to put a question and then the prosecution objected to that question. Then the court, not feeling themselves competent to decide between us as to whether the question could be legally put or not, referred the question, as I understood, to the Judge-Advocate General.

2793. (*Chairman.*) That, however, is not what you object to; what you object to is that the Deputy Judge Advocate-General should have had a voice in the transaction at all, is it not?—No doubt. If the Judge Advocate-General was to be the deciding party, it certainly was very unfair upon the prisoner that the Deputy Judge Advocate-General should be the party acting against him.

2794. (*Capt. Vivian.*) Did the prisoner raise any formal objection to this?—There was no chance of raising a formal objection. I should have thought that it would have been an act of great indiscretion on my part to have advised the prisoner to have done that which would have borne the character of an act of insubordination. The highest authorities at the Horse Guards, and I suppose at the Judge Advocate-General's office, had determined that a particular course should be adopted, and I did not feel myself justified in saying more than just pointing out the remarkable nature of the proceedings. But I cannot remember whether or not prisoner did so in his reply.

2795. (*Lt.-Gen. Peel.*) What I understand you to object to is this: that practically the Deputy Judge Advocate-General, being the adviser of the prosecution, and they having recommended him to put a question, and that question being objected to, he had to decide finally whether or not it was a proper question?—He did not decide personally, but the department in which he was acting did so.

2796. (*Lt.-Gen. Scarlett.*) If the prosecutor's adviser had not been connected with the Judge Advocate-General's Office, you would not have objected to him in any way, would you?—No, it would have removed that part of my objection altogether. Of course I should have thought it an extremely inconvenient thing that a criminal tribunal should be administering justice without somebody present on the spot who would be competent to advise the tribunal. I think that it is very inconvenient that you should have a tribunal adminishing justice without somebody present

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whose decisions should be immediate and final upon questions of evidence.

2797. (*Mr. Whitbread.*) You felt that your position was this, that the practice of the prosecutor and the court being both advised from the same department was not contrary to the practice and regulations of the service, and that therefore you had no rule or law to appeal to if you had started the objection?—I did not know whether it was so or not, as it was my first experience of courts-martial, but it certainly militated extremely against everything that I had learned everywhere else.

2798. (*Chairman.*) You stated, did you not, that the Deputy Judge Advocate-General was the adviser of the prosecution?—He was.

2799. Did you make the objection that on that court-martial the Deputy Judge Advocate-General was acting contrary to the Queen's Regulations in appearing as adviser to the prosecution?—No; if it had been against the Queen's Regulations I should have felt, of course, that I might have taken the objection; but he did not nominally appear as Deputy Judge Advocate, though in fact he was so, and though, as we knew perfectly well, he was, and must have been, in constant and daily communication with the Judge Advocate-General's Department; and therefore it signified extremely little what he was called. He was in point of fact the Deputy Judge Advocate-General; he was the person who got up the case for the prosecution, and who got up the evidence in that department which was to be the ultimate judge of the propriety of the decision of the court.

2800. Are you aware that since that court-martial to which you have alluded the Queen's Regulations have been so altered that at the present time the Deputy Judge Advocate is directed to maintain an entirely impartial position, and to act only as the adviser of the court?—That may be so; but I do not think that affects the case at all, because the Deputy Judge Advocate-General did not appear in the official position of Deputy Judge Advocate, and therefore he would not have been touched by that regulation. But as a matter of fact he was Deputy Judge Advocate-General; and there is another objection still stronger than the one which I have stated, which is this, that in that case the evidence for the prosecution was got up in the Judge Advocate-General's department (I shall be corrected if I am mistaken in that), and I believe that the witnesses for the prosecution were examined in the Judge Advocate-General's Office in the department which was in the final result to be the judge as to the propriety of the sentence. That seemed to me to be a confusion of jurisdictions which I was entirely unable to comprehend. It would be as if the prosecution which has recently taken place of the Fenians had been got up by the Lord Chief Justice of England; as if in the Lord Chief Justice's rooms the witnesses had been examined and their depositions taken down by a Judge of the Court of Queen's Bench; and as if finally the Court of Queen's Bench were to have been the judges of the propriety of the verdict of the jury and of the sentence which they themselves had passed. I do not know whether that is what is called "the custom of war," but it is certainly not the practice of Westminster Hall.

2801. I understand you that this regulation to which I have just alluded is not sufficient to meet the case?—You will probably hear from the present Judge Advocate-General, and from the gallant general who was the nominal prosecutor on that court-martial, that that would not have touched the case, because the adviser of the prosecution appeared there, though he was the Deputy Judge Advocate-General, and though he had got up the evidence himself in the Judge Advocate-General's office, not as Deputy Judge Advocate, but as what I may call the private legal adviser of the prosecution.

2802. (*Mr. Whitbread.*) But would you not raise the point at once upon that regulation if you saw a man appearing not as himself but in another capacity?—Perhaps I may be allowed to say that this was much too ticklish a case, especially in the earlier part of it, for me to have raised an objection as to jurisdiction. If it had been the most valid objection in the world I would not have raised it.

2803. (*Lt.-Gen. Peel.*) I understand you to say that the prosecution had a perfect right to have the assistance of a legal adviser?—Yes.

2804. But that what you object to was that that legal adviser was the Deputy Judge Advocate-General?—No doubt.

2805. But he was not recognized by the court at all in his official capacity as Deputy Judge Advocate-General; in case of any legal objection the court did not refer it to him to decide, did they?—That may have been so, but the court knew very well that he was the man who was ultimately to overrule them.

2806. By his ultimate decision, but not by his decision given in the court at the time when an objection was raised?—No; but the difficulty was that supposing that the court had decided against him they knew that he or his department were the parties who might afterwards overrule their decision because they had decided against him. The Judge Advocate-General had the power of pronouncing upon the validity of the court-martial or otherwise, and yet the very man against whom they would have decided was the man who was ultimately to sit in judgment upon the point.

2807. I am not, as you well know, justifying the appearance of the Deputy Judge Advocate-General in that case; but was it not the case that he was not recognized as appearing there in his official capacity?—He was not officially recognized, but privately, of course, the fact that he was Deputy Judge Advocate-General had, and must have had, a very powerful influence upon the action of the court.

2808. (*Lt.-Gen. Scarlett.*) But in fact, was not another officer appointed as Deputy Judge Advocate?—Yes; but I think that the gallant general, who was the nominal prosecutor, will fully bear me out in saying that in all questions which affected law or evidence the legal advisers on both sides were practically allowed to fight it out, and I may, perhaps, be allowed to say that every disposition was shown on the part of the legal advisers on both sides to remove, as far as possible, all difficulties from the court; and I am sure that the gallant general will bear me out in saying that we constantly retired privately with the court for the purpose, as far as possible, of settling questions without dispute, and that the acting Judge Advocate present did not, as a fact, take any part in deciding questions which were in issue upon the evdence. With the permission of the Commission, I may say that I take it that one of the things which led to that court-martial was, that in a case which had attracted public attention there was a want of public confidence in the system of administration of justice by courts-martial; that might be a well founded or an ill founded opinion, but there is no doubt that what caused that court-martial was that for various reasons there was a want of confidence in the manner in which courts-martial were administered, and that, no doubt, is exhibited also by the system of courts-martial altogether, because it seems a very strange thing that you should have a court sitting, and that you should say that the sentence of that court shall not be carried out until it has been subsequently revised. That seems a much more inconvenient mode than having established some system by which confidence may be given in the administration of justice at the time that justice is so administered, because a man in the position of Judge Advocate-General may naturally when he looks at the proceedings and sees considerable irregularities say, "there are irregularities which if "anybody had been there who understood the laws of "evidence would not have occurred; but it is a "very serious thing to reverse this sentence, which "may perhaps on the whole be right;" and he has a natural disinclination to do that. But on the other hand people who may be dissatisfied with the decision

lay their fingers on those blots which unquestionably occurred, and they say, "The whole thing is wrong, "because you see so and so was allowed to be said, "and another thing was allowed to be done which "would be allowed to be done in no other court "in the country." The consequence is that public opinion is shaken upon the whole transactions, and confidence is not given to tribunals which do not administer justice upon the principles with which the public are familiar.

2809. (*Chairman.*) But I think you said that you yourself were agreeably surprised with the constitution of the court-martial?—You must take that with this fact, that it was a very exceptional court-martial. There were lawyers on each side, and practically speaking that court-martial was pretty nearly administered like a trial in Westminster Hall, and I should imagine (though I have not of course personal experience) totally differently from what ordinarily takes place at courts-martial. In point of fact that court-martial was so held because people had not confidence in the system of the previous courts-martial to which it referred. What seems to me to be the great object to be gained is to establish some system which will give public confidence in the administration of justice by courts-martial, which I do not think they at present possess. It may be an unjust impression, but at all events it is an impression which very widely maintains that justice is not administered by courts-martial in the same manner as it is in the other tribunals of the country.

2810. (*Lt.-Gen. Peel.*) Do you suppose that that want of confidence extends to the military officers themselves, or that it is only confined to the public?—Of course as to military officers themselves I am very unfit to give an opinion upon that subject, but it seems to me to be of the first consequence that confidence should be given to the public in the administration of justice on courts-martial for two reasons: first of all, as I think the right hon. and gallant general's own illustration once given was, "those who "pay the piper have a right to call the tune;" and therefore they have some right to have something to say in the matter. But a still more important question (and that is one which lay I think very much at the foundation of the Crawley court-martial) is, that so long as the public have no confidence in the administration of military justice, your enlistment will very much suffer; and as long as it is supposed that injustice is possible in the administration of your military tribunals, where you have a voluntary army dependent absolutely upon public opinion, the foundation of your army really subsisting upon your satisfying public opinion, you must satisfy public opinion that your military system is a just one. The first thing that seems to me to be necessary in the administration of justice is that the laws of evidence should be regarded. I know a great many people think that the laws of evidence are technical things, but that is not so at all. The laws of evidence are nothing more nor less than the rules of discovering what tends to moral proof. Now I do not understand how it is possible that justice can be done by people who do not understand what are the things which tend to prove guilt or to prove innocence; and what are those things which ought to be eliminated and abandoned as not proving them; and a tribunal which is ignorant of the laws of evidence seems to me to be incapable of administering justice. I know there is a popular notion that you can arrive by the light of nature and common sense at the laws of evidence, but that is not so. You might just as well say you might arrive by the light of nature at the manner of manœuvring an army. I think that if we lawyers endeavoured to handle an army of 100,000 men we should be in about the same situation as a board of officers who were endeavouring to administer the laws of evidence in a criminal trial; and I think the results are pretty much the same. I believe it is a military expression that you get an army "clubbed," if you get it into inextricable confusion; and I think that, generally speaking, a military tribunal gets the evidence pretty well "clubbed" before they have done with it, and that the result is eminently unsatisfactory.

2811. (*Chairman.*) But is not the law of evidence one of the most difficult studies in your profession?—That is perfectly true.

2812. And it is one with which lawyers have the greatest difficulty in contending in their education for the bar, is it not?—No doubt; and with which most of them are least acquainted.

2813. But seeing that these cases must be tried by military tribunals and not sent to a civil tribunal, how would you suggest that the laws of evidence should be strictly enforced in a court-martial?—First of all I start with this proposition, without, I do not say a pedantic observance of particular laws of evidence, but without a general and thorough knowledge and observance of the laws of evidence, the administration of justice is impossible. Then I say that if you are are going to satisfy public opinion as to the justice of your military tribunals you must satisfy them that justice is administered upon the fundamental principles of the laws of evidence. Therefore I say that whatever cost and whatever trouble it puts you to you must secure that object. I would have a legal assessor to the court. It is as you have said a thing that requires a great deal of study, and what is still more important a great deal of practice, to know the laws of evidence, and I would have a man of experience and practice to advise, I will not say on small matters of discipline, but on all important questions in general courts-martial. I would have a legal assessor to advise the court, and according to my own impression I would have no legal adviser, either of the prisoner or of the prosecutor. It seems to me that I would leave them to tell their own story in their own way. If you give the court the protection of a legal adviser to show them that they are conducting the case properly, and to show the public (which is equally important) that they are conducting the proceedings according to the known and recognized principles of evidence, then I am not quite sure that you might not dispense altogether with the office of Judge Advocate-General. It seems to me that then you would have accomplished at the time that which in a very much more imperfect way you accomplish afterwards, that is to say instead of having a bad trial to be revised subsequently by the Judge Advocate-General you have a good trial. In point of fact you would then be doing at the same time the very same thing which you are now doing afterwards by a very clumsy process, which throws discredit on the court by reversing its sentence if it is irregular; you are at the same time giving confidence to everybody in the court; you will raise the character of the court in the estimation of everybody, and you will give what is very often of great importance, immediate effect to the sentence, because then there is no reason why the sentence should be reserved to be reviewed; and you will save the court-martial from the humiliation to which they are constantly exposed of being turned back like a boy at school, because he does not know his lesson.

2814. But would not your suggestion involve this: that in the case of a private soldier being tried before a general court-martial, he would be under the disadvantage of having to confront men of much greater education and much greater talent than himself, without having any legal assistance whatever?—He would be in the position that every prisoner, one of Her Majesty's subjects, is in who is without counsel and he would receive I should suppose the same assistance that a civil prisoner receives under these circumstances from the judge who is trying him.

2815. But a prisoner in the civil court, though he is generally without counsel, always has the power of retaining counsel, has he not?—No doubt, but I say that he would be no worse off than a prisoner who is not retaining counsel. I do not wish in the least in in the world to introduce legal special pleading into courts-martial. I think that would be very injurious

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to the service in every possible way, and therefore I do not want to have two attorneys or two barristers, one on each side, raising all kinds of technical points for the court. I quite admit that military justice must be administered in a somewhat ruder way than that in which it is conducted in Westminster Hall; but at the same time I cannot admit that it is to be considered as dispensed altogether from the observance of the first principles of evidence, which it seems to me is much too often the case, and must always be the case, because, unless a man has been trained to it he does not know what is evidence and what is not.

2816. (*Lt.-Gen. Eyre.*) Do you confine your observations exclusively to general courts-martial?—I confine my observations exclusively to general courts-martial.

2817. (*Mr. Mowbray.*) Do you think that course of proceeding would give satisfaction to the public?—I do indeed, because why should you not have men advising courts-martial of the position and status in the profession of a recorder for instance? You would get just that class of men, who administer justice in all the towns of England. That is a matter of which of course I have not personally the means of speaking; but I should have thought that one or two or certainly three such persons would have been quite sufficient to advise all the courts-martial that take place in Great Britain. They might go a circuit; they would be sent for, not exactly like the hangman, but at all events when they were wanted; and then that would be perfectly sufficient for your home army. In the field you must make the laws of war of course prevail and there is nothing to be said there; but in your colonies you might make the Attorney General, or the Law officer of the Crown (whether it be in the Cape or the West India Islands or wherever you have a civil establishment, you have a lawyer) the ex officio adviser of a general court-martial, and cause him to be present there and in point of fact have him sit as assessor just as the Trinity brethren sit as assessors to the Judge of the Court of Admiralty, and expound to him the laws of navigation, of which the Judge of the Court of Admiralty is ignorant just as a court-martial is ignorant of the laws of evidence.

2818. Taking your own case of a recorder, in every case where a recorder presides there is a bar practising before him, is there not?—No doubt. I do not lay great stress on what I have said as to that. My own inclination I confess would have been subject to the legal advice of the assessor that I have spoken of to relieve the court from the somewhat technical kind of objections that lawyers, I am afraid, are sometimes disposed to make.

2819. But an illiterate person brought to trial at quarter sessions and charged with an offence knows that he can always avail himself of the assistance of a legal gentleman accustomed to the rules of evidence and able to cross-examine the witnesses who are brought to prove the case against him?—The reason why I say this is because, while I very much wish to conciliate public opinion towards courts-martial, I do not wish to see a system introduced which would rather irritate the military mind. I think if they found courts-martial were turned simply into courts of law, and if they had always lawyers coming in and turning it, in point of fact, into a sort of Westminster Hall, probably that would be (though I do not profess to be a good judge of that) disadvantageous to the discipline of the army.

2820. If the arguments which you are now using against prisoners tried by court-martial having the assistance of legal advisers be good, would they not be equally good against a bar appearing before a recorder or a bench of magistrates at quarter sessions?—You see you are introducing a new system; and therefore you judge of it accordingly. If we were to make such a rule with respect to the court of quarter sessions we should be taking away a thing to which people are accustomed; but I think that if you had the security that the court itself was guided by a person experienced in the laws of evidence, that would go a long way to reassure the public about the administration of justice, which I think is a very necessary thing, and on which I do not think confidence exists. I had the opportunity on that court-martial, I am happy to say, of making the acquaintance of a number of very distinguished officers, whom I have met very frequently since, and they have said: "We have nothing to do "with the laws of evidence in courts-martial, that is not "the thing." One of the most distinguished officers in the service said to me only the other night: "We "judge by the custom of war;" but I do not see what the custom of war has to say to the laws of evidence. If you choose to say, and if it is necessary for the purposes of military discipline that you should give the commanding officer an absolute and summary power, well and good; give it him and let him say: "I administer justice according to my own judgment." If that is necessary do it. But if you are to go through a form of trial, then it seems to me to be absolutely necessary that that trial should be conducted according to the laws of evidence. If it is inconsistent with your discipline to have a trial, do not have one; but if you are to have a trial, surely it ought to be conducted according to the strict principles of evidence. I mention that, because I know that there is a very strong feeling on the part of a great number of the military profession, that this would introduce something which is not essential, that it would be an entire revolution in the whole of their theory of the administration of justice; but that seems to me to be absolutely essential.

2821. Then do you really think it would be advisable to introduce into the trial of offences by military tribunals a system the very opposite to that which prevails in all other criminal courts in the country?—I do not say it is the opposite; on the contrary, I propose that it should be an assimilation to it as far as is compatible with the discipline of the army. If it is compatible with the discipline of the army and the opinion of military men that there should be counsel for the prosecution and counsel for the defence, then I do not say at all, as a lawyer, that I should not prefer it; but I have an impression on my mind that that would be introducing a litigious spirit which would certainly be very distasteful to the military profession, and possibly (though I am of course no judge of that) not advantageous to military discipline; but I say that I do not attach the same importance to that as I do attach to having the court itself competently advised on the principles of evidence. That is the thing to which I attach the main importance, and the other, I think, is a secondary matter.

2822. (*Lt.-Gen. Peel.*) Your proposal is to substitute for the Judge Advocate, who attends a general court-martial now, a legal assessor?—I would propose to substitute a legal assessor.

2823. Upon the ground that you think it would give greater confidence to the public in general that the court should be assisted by a person who is a better judge of the law of evidence than the Judge Advocate?—Yes; and I also hope and think that it would give greater confidence to the court, because a court may very often feel puzzled on such questions. Perhaps you will allow me to give an instance of that. On that court-martial, which consisted of certainly some of the most eminent men in the military profession, this question arose: there was a certain witness called to give evidence in favour of the character of Serjeant-Major Lilly, one of the charges in the case being that Serjeant-Major Lilly had been harshly and improperly treated; it was considered probably not strictly legally in issue whether Serjeant-Major Lilly had been a very well-conducted man who had been ill treated, or whether there were reasons for the conduct that had been pursued towards him. An officer was called to give a good character to Serjeant-Major Lilly, and that officer being called I advised the prisoner to ask a question which he considered to be of great importance, which was within the cognisance of that officer, and the court themselves *ex mero motu*, and not at the suggestion of the

prosecution, retired to consider this question, "Can a "witness who is called to character be cross-examined "generally?" Now that is a question which never could have suggested itself to the mind of anybody who had studied the laws of evidence. This man was not a witness called to character. They were misled as people who are not professionally educated will be misled, by a phrase. Of course he would have been a witness called to character if he had been called to the character of the prisoner; but this was upon a collateral issue, and of course there could be no such objection. The court retired, and they sent for the Deputy Judge Advocate-General and myself to ask what our opinion upon the subject was. I said, "I "am the junior, and I am quite sure that the Judge "Advocate-General will tell you the rule in that case." And of course he said, "There is no question that he "can be cross-examined generally." But supposing we had not wished to assist the court and had squabbled about it, how in the world was the court to decide such a question as that? It was quite obvious that they had not in their own minds a conception of the character or principles of the laws of evidence. That only shows how embarrassed a court may be which is not educated. They did not even know whether such a question as that could or could not be put, nor had they even an idea of the nature of the principles on which it was to be decided.

2824. Who was the Judge Advocate-General who was called in on that occasion, the one whose presence you objected to?—The Deputy Judge Advocate-General was acting with the prosecutor, and the court, knowing that we wished to keep the matter straight as well as we could, instead of conducting the discussion in open court, constantly retired into a private room with us, and they asked our opinion and we frankly gave it; and if in discussion between ourselves we thought the question might be safely withdrawn we withdrew it.

2825. Then he was so far recognized by the court as to be consulted on occasions of that kind?—He was consulted, not as Deputy Judge Advocate-General, but as the legal adviser of the prosecution. In fact the court said to us, "Tell us what we ought "to do." I say that is a position in which no court of justice ought to be placed.

2826. (*Mr. Mowbray.*) Your object, as I understand it, is to secure a more competent court?—My object is to secure a more competent court.

2827. I suppose you will admit that a judge of assize is a competent court?—I ought to do so.

2828. And yet it is not supposed that before a court so constituted a prisoner is not greatly benefited by being enabled to avail himself of the advice of a barrister?—Yes; I am not so very closely wedded to that opinion. I do not want to abolish barristers at all, but really I think you rather lay too much stress on what I have said. I only threw out, as an opinion, that it might be posible to dispense with it; at all events that it would be less necessary for the protection of the prisoner.

2829. Would it not be better to do both things, to render the court more competent and efficient, and at the same time to give the prisoner an opportunity of availing himself of what legal assistance he can procure?—If that is considered to be consistent with military discipline, I should say, certainly, yes; but on that subject of course I can give no opinion.

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2830. Is not that more likely at once to be more satisfactory to the public, and to conduce to the proper administration of justice?—As regards the satisfaction of the public, I think that so long as they are assured of the legal capacity of the court as to the law of evidence, they would be satisfied.

2831. (*Lt.-Gen. Eyre.*) Is there any reason that you know of why military officers might not qualify themselves for the legal duties to which you have referred instead of the Government having to employ civil practitioners?—My answer to that is this, that above all things the law of evidence is one which can only be learned by practice. The study of the law of evidence from books is necessarily extremely incomplete, and there is nothing in which in my judgment absolute practice is so essential as in the law of evidence.

2832. But, if it become a department of the staff, and officers were regularly educated for that special duty, might not that objection be obviated?—If officers would go to the bar and go sessions, then I should say so; but otherwise, how are they to get the practice? because their only practice would be before military tribunals. What I want is to have men who have practised before the the civil tribunals and have been drilled in the laws of evidence before the judges of the land, and who have had the sort of training that an English barrister gets when he goes sessions. That is the sort of practice that seems to me to be essential.

2833. (*Capt. Vivian.*) Have you ever considered how it would act if you had military courts-martial, composed as they are now of military officers with a legal head, in the nature, as you suggest, of a recorder to preside over the court-martial, and if those courts sat in districts in permanence, all cases being referred to them for trial, the members of that court changing at the pleasure of the general of the district, or of the Commander-in-Chief, from time to time, each of them before becoming members passing a certain examination in military law?—That is a question of military administration on which I do not feel competent to offer an opinion. All I want is that the court should have a legal adviser, and I would rather see the legal person the assessor of the court than the master of it. I wish always to ensure to the military profession the control of the court, just as in the Court of Admiralty you have the Trinity Brethren to advise on navigation, but the judge must always be the master of the court. I would certainly not give the primary control or the presidency of the court to a lawyer. My impression would be against that altogether, because I think that would shake the confidence of the army in the administration of courts-martial.

2834. (*Chairman.*) Did anything else occur to you in that trial which you wish to mention?—I think not.

The witness withdrew.

The Right Honourable THOMAS E. HEADLAM, a member of the Commission, further examined.

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2835. (*Chairman.*) You desire to make an explanatory statement to the Commission, do you not?—Yes; I think, after what has been stated with respect to the trial of Colonel Crawley, that it is desirable for many reasons that the whole of the circumstances of that rather peculiar case, and the cause of the particular course which was then taken, should be stated. I quite agree with Mr. Harcourt that the case was an exceptional one. I also quite agree with him that the particular course which was then adopted, of the Deputy Judge Advocate-General advising the prosecution, is not one which ought to be or is the least likely to be adopted again; and I may say further that there are some special circumstances connected with that case which make it to me a matter of regret that, as it was so purely a matter of exception, allusion should have been made to it, and rendered it necessary for me to state fully the circumstances of the case. The facts were these: the case of course, as this Commission must be aware, was one of exceeding difficulty and complication. There arrived from India a very large number of witnesses of whose testimony nobody in this country was really cognizant. Under those circumstances the authorities at the Horse Guards applied for assistance to the Deputy Judge Advocate-General, and, whether, wisely or not, he gave assistance in arranging that evidence. I then, not knowing precisely what part he had taken in the

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matter, strongly urged upon him to accept what I considered would be his natural duty, viz., that of acting as Deputy Judge Advocate at the trial. The same was pressed upon him by the authorities at the Horse Guards, but the Deputy Judge Advocate-General stated that, having been asked to do the work which he had done, he had found that, by degrees, without being aware of it, he had become to a certain extent mixed up with the prosecution; and that, therefore, there would be objections, not of a technical kind, but of a real kind, were he then to act as Deputy Judge Advocate at the trial. He stated that, both to me very strongly, and also I believe to His Royal Highness the Duke of Cambridge; and upon a statement of that kind from a person of his position of course I immediately abstained from pressing him further on the subject. I then did the best I could, which was to get the officer who I thought, from all the recommendations that I could get, was the best qualified to give confidence to the court, and to fill the office of Deputy Judge Advocate at the trial in the best possible mode. The officer selected was Colonel Pipon, and I have no hesitation in saying that no one could have been selected who was more fit to fill that place. Then came the question as to how the prosecution was to be conducted, and the prosecution was conducted by giving to a gallant officer behind me the duty of conducting the prosecution; and as the Deputy Judge Advocate-General had been assisting in getting up the evidence, I thought that it was far better, he having taken that part up to that time, that he should go on doing what he had done, and that the prosecution should then be conducted by General Horsford acting as the prosecutor before the court with the legal advice of the Deputy Judge Advocate-General continued in the same manner, and that the two things should be perfectly and entirely separate; and I acted as Judge Advocate-General, communicating with Colonel Pipon, who acted as Deputy Judge Advocate at the trial. It was not a course which I should have suggested, and I regret that it did take place; but that was the course which, under those circumstances, was considered to be the best, and I cannot say that there was any substantial objection to it, whatever there may have been in sound, because, as the prisoner was instructed, advised, and supported by a man in Mr. Harcourt's position, there was really no reason why General Horsford should not have been instructed, advised, and supported also by as able a man as we could get; and I have not the smallest doubt that in any of those conferences with the court the influence of Mr. Harcourt would weigh as much as that of the Deputy Judge Advocate-General, although he was undoubtedly connected with the particular office which I held. The part which I had to take in the case was really very small. Some telegraphic messages were sent up to me, and I advised Colonel Pipon whenever he wished it. My intercourse was exclusively with him; I do not recollect deciding anything, as has been stated, against the prisoner. It is quite possible that to some question which was sent up to me by the court I may have given some answer against the prisoner; but, however that was I had no more to do with the Deputy Judge Advocate-General than if he had been any other person whatever. The question was sent to me and the Deputy Judge Advocate-General was acting down at Aldershot advising the prosecution, and if a question was sent up to me to advise upon it the circumstance of the Deputy Judge Advocate-General filling that post would not have entered into the subject in the slightest possible degree. With respect to the mere technical objection, that he was connected with the office, I do not think that was one upon which I could have refused to allow him to assist the prosecution. It must be recollected that, whatever may now be the status of the office, it was the duty of the Deputy Judge Advocate's office to conduct the prosecution. One of my predecessors, upon the trial of General Whitlock, in the commencement of this century, performed the duties of absolute prosecutor. I do not say that it was a right course, but there was no technical objection to it. I could not, therefore, say that the Judge Advocate-General's office was so completely distinct as to render it wrong upon those grounds. I looked to substance and not to form; and, as I said before, it was not exactly the course which I should have advised or wished; in short I advised as strongly as possible against it, but it occurred in that shape, and the prisoner being advised by a person like Mr. Harcourt, and General Horsford being advised by a person like the then Deputy Judge Advocate-General, there was no substantial objection; and the part of the Judge Advocate, so far as there was any part, was conducted by Colonel Pipon, communicating directly with me on the subject. Although, as I said before, it is not a course which is likely to be taken again, and it would not have occurred then but for the very special circumstances which I have mentioned, yet at the same time there was no substantial interference with justice, and I can only say again, in conclusion, as I said in the beginning, that there were special circumstances in that case which render it a matter of regret to me that I should have had to refer to it.

2836. (*Mr. Mowbray.*) You had to go back half a century to find a precedent, had you not?—I had not the least difficulty in finding a precedent.

2837. (*Chairman.*) I do not understand you to object in any way to to the new rule?—Not in the least.

2838. In point of fact you approve of it, do you not?—I approve of it.

2839. (*Mr. Mowbray.*) In fact, upon reflection, do you not think that it would have been better if an attorney had been employed to get up the case instead of the Deputy Judge Advocate-General being so employed?—No doubt.

2840. (*Lt.-Gen. Scarlett.*) Had the Horse Guards any legal adviser to go to except the Judge Advocate-General?—I put into those resolutions an express clause that when attorneys were employed for the prosecution it would be desirable that the Horse Guards should have the benefit of an attorney to assist them, but that was not the case at that time. Whether rightly or wrongly, the Horse Guards did apply to their ordinary legal advisers to assist them in marshalling that evidence, and that was the root of the evil; by that means the Deputy Judge Advocate-General became mixed up with the prosecution, and perhaps it would have been better that it should have been unknown that he had done so, and that he should have been recognized before the court as the person to assist in the prosecution; but it was a much fairer and a much more straightforward course than that, having taken some part in the prosecution, he should continue acting the Deputy Judge Advocate's office.

2841. (*Mr. Mowbray.*) Would not the next best thing have been that he should have retired altogether from taking any part in the case, and that other legal advisers should have been appointed?—Perhaps it might have been so; but I do not think it would have been so fair a course, because he would then undoubtedly have remained in my office, and then it would have come out afterwards that he had been taking part in the prosecution, and there would have been much more substance in the objection. If he had not been acting on the trial as he was I should have been in communication with him, and as it was I was not in communication with him.

2842. (*Lt.-Gen. Scarlett.*) Does not the whole of this rather tend to prove what was stated by a former witness, that it would be a very great advantage to the Horse Guards to have a separate legal adviser?—I think it is scarcely requisite, because a case of this kind occurs very rarely; but upon the occurrence of a case of this kind it would be much better that a counsel or an attorney should act.

2843. (*Lt.-Gen. Peel.*) I understood you to say that you considered that no practical injustice was committed on that court-martial by the Deputy Judge Advocate-General being there?—No.

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2844. Was not a certain question complained of on the part of the prosecution as to which the prisoner wished to give evidence on another point, and it was objected to and afterwards, in the reply for the defence, was not that very thing brought forward?—There were objections to the reply, I think, which were perhaps proper objections; but I did not quite understand what was the particular point.

The witness withdrew.

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William George Granville Venables Vernon Harcourt, Esq., Q.C., recalled and further examined.

2845. (*Chairman.*) Do you wish to make any further statement to the Commission?—There is one thing which I omitted in my evidence, which I wish to supply. According to my experience it is the practice upon military courts-martial to refuse to the prisoner a perusal of the depositions, or I should perhaps more correctly say preliminary examinations, with reference to the charge against him. In the only instance of which I have personal experience it came to my knowledge that a great number of witnesses had been examined for the prosecution; that their evidence had been taken down in the Judge Advocate-General's department; that evidence, as I believe, having been taken in India, I think before magistrates, on the subject of the charge against the prisoner. I advised the prisoner to make a written application, if I remember rightly, both to the Judge Advocate-General's department and to the Horse Guards, or certainly to one of them, to be allowed to see those depositions. We received a reply that that could not be permitted. I imagine, therefore, that there is some rule in that respect in the military service which is different from that in the civil tribunals. I lay no stress upon the fact of the thing being in the formal shape of a deposition, but I do think that it is fair to the prisoner that he should be allowed to know what are the names of the witnesses and the character of the evidence which has been preliminarily taken against him and upon which the charge is to be supported. To be without such information seems to me to place the military prisoner in a position of exceptional disadvantage.

2846. (*Mr. Mowbray.*) You have spoken of a practice. Do you know, or have you ever heard of any instance where such a practice has prevailed, except the single instance to which you allude?—I know of no other instance, my experience being confined solely to that particular case.

2847. Are you aware that in the recent Fenian trials the course which you suggest has been pursued, namely, that the names of the witnesses and the substance of the evidence which they are to give has been communicated to the persons charged with the offences before the trial?—That is not within my knowledge. If it is so, I can only say that I think it is a very proper practice.

The witness withdrew.

Capt. A. P. Miller.

Captain A. P. Miller called in and examined.

2848. (*Chairman.*) You are the governor of the military prison at Aldershot, are you not?—I am.

2849. How long have you been in that position?—I have been in the military prison service 17 years in August; I have been 12 years at Aldershot, and I formed the military prison there.

2850. Had you had any experience of military prisons before you went to Aldershot?—Yes; I had been superintendent of the military prisons and garrison cells in Canada for four years before that. Of course I was in the service before that; I was a captain in the 92nd Highlanders before that.

2851. In the course of your experience at Aldershot you have had, I presume, to inflict all the military punishments that are usually inflicted under sentences of courts-martial?—Yes.

2852. Will you state to the Commission what are the military punishments which in the prison at Aldershot you have the means of inflicting?—We carry out what are called sentences of hard labour only; we do not carry out solitary sentences, because we have no cells. No solitary sentences have ever been carried out at Aldershot from want of means.

2853. Have you ever been in a prison where they had the power of carrying out solitary confinement?—I was superintendent of one in Canada where we carried it out. There were 60 or 70 prisoners.

2854. Have you in your experience been cognizant of all the classes of punishment which can be inflicted by military tribunals?—Yes.

2855. Of every kind?—Yes, both by courts-martial and commanding officers' sentences also.

2856. Will you state what you consider to be the severest punishment which can be inflicted by military tribunals?—Hard labour.

2857. For what period can that be inflicted?—At present they can go up to any period they like up to two years, in fact I have some men with four years, double sentences.

2858. What is the nature of the hard labour in the prison at Aldershot?—The nature of hard labour in the prison at Aldershot consists of shot drill for the third and second classes, and picking oakum.

2859. I presume that the shot drill is the severest, is it not?—It is so to some people, but it depends upon the constitution entirely.

2860. Can you point out any punishment which is severer to any constitution than shot drill?—I am not prepared to do that.

2861. Have you any means of inflicting the punishment of the treadwheel?—No.

2862. What are the means of inflicting hard labour that you have?—I can give shot drill. I have the means of inflicting hard labour upon men who have been some time in prison by special authority of the Secretary of War by employing them upon the public works, and when that is properly directed and managed I consider that I could even get more hard labour out of them by that than by any other means.

2863. (*Lt.-Gen. Peel.*) If a man is sentenced by a court-martial to hard labour, does the nature of the hard labour to be inflicted upon the prisoner rest exclusively with you?—No, I have no option. I must carry out the hard labour.

2864. When you receive a prisoner under sentence of court-martial, what is the nature of the committal?—That he is to have so many days imprisonment with hard labour, subject of course to the opinion of the medical officer that he is fit for it.

2865. Having received that prisoner with such instructions, does it remain with you to inflict whatever hard labour you consider proper?—I must inflict the regular hard labour, which is shot drill, within the prison, unless the medical officer certifies that the man is not fit for it.

2866. (*Capt. Vivian.*) For how many hours in the day?—For three hours.

2867. (*Lt.-Gen. Scarlett.*) Could you inflict shot drill during the whole time that he is in prison?—For a very short sentence, but you could not do it for any length of time in my opinion with safety.

2868. (*Chairman.*) Have you means of inflicting any hard labour which is productive?—I have.

2869. What is the nature of that hard labour?—I have special authority from the Secretary of War that when the men are in the first class they may be employed in the Royal Engineers' department on the public works; that is to say, in digging gravel, making roads and drains, and any kinds of work that is of advantage to the public.

2870. (*Capt. Vivian.*) Will you be good enough to explain what the meaning of "classes" is?—When

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a man first comes into prison, as a general rule, he goes, no matter what he is, into the third class, and he goes through a probation there; and if he has not been convicted before he very soon gets out of that class.

2871. What do the third class do?—They pick oakum and they carry shot.

2872. Then what is the difference between the third and the second classes?—The second class carry a lighter shot and pick oakum, and that is the only difference. In the first class, if I can find useful work for them, they never go near shot drill.

2873. (*Lt.-Gen. Peel.*) But the classification is a prison classification and not as to their character as soldiers?—No.

2874. (*Capt. Vivian.*) It is simply as regards their conduct in prison?—Yes.

2875. (*Chairman.*) Then whatever the crime may have been for which a prisoner is sentenced, when he comes into your hands it is left entirely to your discretion, and you have no power of referring to the nature of the crime for which he is sentenced?—The answer to that would be that if a man has never been tried before, supposing he came to me, and I thought it advisable, if he was a man of good character, I have the power of putting him into the first class within a very few days, but if he has been tried before there is a regular time which he must serve in each class.

2876. (*Lt.-Gen. Peel.*) But how do you ascertain whether or not a man has been tried before?—Because in the commitments we must be furnished with the previous convictions and the history of the man. With each man we get a regular committal paper, with all his previous history marked upon it, even to his regimental punishments by the commanding officer.

2877. (*Chairman.*) Do you keep a register of all the prisoners who come under your supervision?—Yes.

2878. Have you been able to observe the effects of the different punishments upon the individuals?—Yes.

2879. Taking shot drill as the severest punishment, do you observe any great difference in the repetition of crime as between prisoners who have been subjected to shot-drill and those who have had other punishments inflicted upon them?—Not the slightest.

2880. You think that as many prisoners come back for a second punishment who have had shot drill inflicted upon them as of those who have had other punishments inflicted upon them?—My own opinion is, that probably fewer come back under the other system.

2881. (*Lt.-Gen. Scarlett.*) But they all have to undergo shot drill, have they not?—Yes, at first starting.

2882. (*Chairman.*) In your opinion what is the punishment which the soldier dreads the most?—My own opinion is that the punishment which a soldier dreads the most is bread and water.

2883. Do you inflict that punishment?—For prison offences I or the visitors can inflict it.

2884. Have you had any experience of corporal punishment?—I have seen it more or less, of course.

2885. Should you say that a soldier dreads any punishment which is now inflicted as much as he dreaded corporal punishment while it was possible to inflict it?—So far as my opinion goes I feel quite certain that many soldiers would much sooner have a flogging than be imprisoned. I have known many men who, I am sure, would rather take a flogging than go on bread and water. I have practical experience of it; that is to say, if I can judge by what the men have told me themselves.

2886. Then is it your opinion that the abolition of corporal punishment has been advisable?—No; that is, with reference to the army outside, because corporal punishment is not abolished in the military prisons. The visitors can flog in the prison for a prison offence. One visitor can give 25 lashes, and three visitors can give 50 lashes.

2887. (*Lt.-Gen. Peel*) Do you mean since the alteration in the Mutiny Act?—The prison rules are not altered.

2888. (*Viscount Eversley.*) When the prisoners are not employed at shot drill or in hard labour, are they associated together or are they confined in separate cells?—In a regular prison when they are not at labour they are in cells; but in my prison, where we have no cells, they are always associated. Ours is an imperfect prison; it is a temporary prison.

2889. (*Chairman.*) You say that you have had experience of solitary confinement?—Yes.

2890. Do you think that the soldier dreads it?—It depends entirely upon the man himself. If he is a lazy man he likes it. I myself have a strong opinion against solitary confinement, because it encourages idleness. A man just sits down, and he is thinking probably not on the best of subjects, and doing no good all the time. I do not think that he cares about it if he is lazy; but if he is an active man he would rather be at work.

2891. (*Maj.-Gen. Horsford.*) Is it not in extreme cases that you have recommended that the visitors should adopt flogging?—Visitors as a general rule are always extremely against it; they only do it in extreme cases.

2892. Therefore, if they only do it in extreme cases, would it not be supposed that it was a greater punishment?—I do not know about that. Some visitors have taken my view, and have considered, as I strongly believe (and I cannot get it out of my head), that bread and water continued for a certain number of days is the most severe punishment to a man. A pound of bread in 24 hours continued for seven days, which a single visitor can give, is a fearful punishment.

2893. (*Chairman.*) With regard to that punishment, have you observed the effect which it has had upon the *physique* of the men?—It pulls them down terribly.

2894. Then the disadvantage of that punishment is that it makes a soldier less capable of performing his duty to his country, does it not?—Yes, of course, if he had been kept on bread and water, and he was to go out immediately after that he would not be so fit to do his duty as if he had been on regular diet.

2895. Could you suggest any mode by which a system of hard labour on a more extensive plan than now exists could be adopted in our military prisons? For instance, do you think that it would be possible to introduce the system of breaking stones; have you that punishment?—We have in most prisons.

2896. Might not the prisoners be engaged in any other works of public utility?—Yes, but of course it would require to be regularly organized. I may state that we have tried a system of hard labour at Aldershot with which some of the members of this Commission are acquainted. Some years ago, when I found I had a great many prisoners there, and really did not know what to do with them in a temporary prison, it was suggested to make them useful. There was a great deal of labour which was required to be done for the camp, and the Secretary of War gave us permission to employ our first-class men at it. I think that if that labour were properly carried out and managed, we could get and ought to get from every soldier under a court-martial sentence a certain amount of remunerative hard labour during his imprisonment.

2897. (*Lt.-Gen. Scarlett.*) Have any applications been made as to the employment of the third or second class prisoners?—Yes, there has lately been an application to extend the principle which has answered very well at Aldershot, but it has been refused. That has not come officially to me, but I know that it has been refused. There is a feeling against it.

2898. (*Viscount Eversley.*) Is your punishment of the third class much more severe than that of the second class or of the first class?—It is more severe in one way, that there is no good in it, and it is

disgusting men, if you can call it so; there is no mind required in it. We have had several kinds of works at which a man cannot be idle. Of course he may be on a work where he can be idle, but I believe that you would get more hard labour out of a man, if it is properly managed, at useful labour than by sending him to shot drill.

2899. Do you ever find it necessary, as a punishment for a prison offence, to degrade a man from the first class to the second class?—Yes, and to the third class.

2900. (*Chairman.*) Could you suggest any very severe punishment, of which you think a soldier would have a great dread, to take the place of corporal punishment, in cases, for instance, of insubordination?—You can only have imprisonment and hard labour, which involves forfeiture of pay. I cannot suggest anything else that the country would stand.

2901. Have you any means in any of the military prisons of applying the treadwheel?—It could be done, of course.

2902. Could it be done at Aldershot?—Of course if there was a treadwheel put down there it could be worked.

2903. (*Capt. Vivian.*) Have you any dark cells in the military prison at Aldershot?—We have two cells which we call dark cells, but they are not dark cells.

2904. (*Chairman.*) From your experience of military prisons, do you think that in all of them there are sufficient means of inflicting military punishments?—Yes, there are perfect means of doing so in all, except probably in my own.

2905. Have you had any experience of solitary confinement in civil prisons?—Not from having been in charge of them, but I know a good deal about them. I happened to have a military prison once which was inside a convict prison, so of course I came into contact with it.

2906. Should you say that the punishments inflicted in military prisons are more or less severe than those inflicted in civil prisons?—I cannot give an opinion upon that.

2907. (*Mr. Whitbread.*) You say that you have no cells at Aldershot?—Strictly speaking we have 12 cells, and that is for 400 men.

2908. Do you keep your men in what is technically termed "association"?—Yes.

2909. They may speak to one another?—Yes.

2910. Is not that regarded as the very greatest luxury in a prison?—A prisoner is not supposed to speak.

2911. But he does speak, does he not?—He does; it is human nature to do so.

2912. Do you mean by solitary confinement what is technically termed solitary confinement, or what is termed separate confinement; you are aware of the distinction?—Yes, I am aware that there is an important distinction between separate confinement and solitary confinement. Separate confinement means that the prisoners work together, for instance, at shot drill or at any occupation, such as picking oakum. Separate confinement means separate cells for their food and for sleeping in.

2913. Is not the system of punishment in separate cells as conducted in all the new prisons in England under the new Act this, that there shall be as little communication as possible between the prisoners, that not a word more than is absolutely required for the duties of the prison shall be spoken, and that although they are sometimes brought together for shot drill, at all other times they are confined in the cells without communication with each other?—Yes.

2914. The distinction between that and solitary confinement was, that under solitary confinement under the old law they were to see nobody except the governor once a day?—Yes; also the medical officer, chaplain, and other authorized prison official.

2915. How many prisoners have you now in the prison at Aldershot?—Between 300 and 400.

2916. Of those, how many would be in the first class, and how many would be in the second class?—As a general rule, about 130 might be in the first class, perhaps about 50 in the second class, and the remainder in the third class.

2917. Are all those men sentenced to hard labour?—All that come to the prison.

2918. Out of the 300 or 400 prisoners, how many would be employed in what are called prison duties?—That is hardly a fair question to ask as to Aldershot, because it is such a temporary sort of place; for instance, we have to employ six or seven prisoners where in a regular prison one or two men would be enough.

2919. It is regarded also as a great boon by prisoners to be employed in the kitchen, or bakehouse, or washhouse, is it not?—Yes.

2920. It lightens the sentence?—Yes. These employments are occasionally given to men for short periods who have long sentences, and who have been for a considerable time in prsion, to give them an case off.

2921. What is the weight of the shot which you use?—32 pound shot and 24 pound shot.

2922. Has the 32 pound shot been objected to on medical grounds as being too heavy?—If the medical officer objects to it he sends them to the 24 pound shot.

2923. What is the nature of the oakum picking, are the junks given to them unravelled?—Yes.

2924. Then it is not hard labour, is it?—It is hard labour in one sense. I consider hard labour to be any continuous "labour" which a man is obliged to perform whether he likes it or not.

2925. Are you aware that giving a man junks to unravel himself, the junks being two feet long or so, makes oakum picking exceedingly hard muscular labour?—It comes to the same thing, supposing we give him easy oakum to pick, because then he must pick so much more.

2926. Is the out-door hard labour which you give in the camp?—Yes, and in the neighbourhood of the camp.

2927. Is that in sight of the soldiers in the camp?—Some of it is.

2928. Has there ever been any objection raised to that, on the ground of communications or signs, more or less, passing between the prisoners and the bystanders?—No, I cannot say that there has.

2929. You are aware, no doubt, from your prison experience, that the convicts were withdrawn from the dockyards mainly on the ground of communications and traffic passing between them and the civilians outside?—I am aware of that. I think that even in a prison itself, like Aldershot, if they are determined to have communication they can have it, whether they are inside or outside, unfortunately.

2930. Can a prisoner have communtcation in a well-built prison?—Not in a well-built prison.

2931. You are not satisfied with the prison at Aldershot as a prison?—It is not a prison.

2932. And you cannot carry out a severe system in such a prison as that?—No.

2933. Will you put in a scale of your dietary?—I have not one with me, but I can send one.

2934. Is that scale universal throughout the military prisons?—Yes; the prison scale at home is universal.

2935. (*Chairman.*) Will you state the quantity of bread and water which a man gets as a punishment?—When a man is on bread and water he gets a pound of bread in the daytime in 24 hours.

2936. Is that administered at once?—That is just optional, according to the prison convenience.

2937. (*Lt.-Gen. Eyre.*) Are you able to suggest any summary punishment which would be capable of being applied very promptly to bad cases?—If it is a bad case the best thing is to have the man handcuffed at once and put into a refractory cell and kept on bread and water, and I think that in a very few days that will tame most men.

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2938. (*Mr. Whitbread.*) Did you ever know a man stand three days of real dark cells without being tamed?—I have an experience of one cell, 24 hours in which I think would tame most men, and that is not very far from here.

The witness withdrew.

Adjourned to Thursday next at 12 o'clock.

Room E., House of Lords.

Thursday, 14th May 1868.

PRESENT:

SAMUEL WHITBREAD, Esq., in the Chair.

Marquis of Hartington.
Viscount Eversley.
The Right Hon. J. R. Mowbray.
The Right Hon. Thomas E. Headlam.
The Right Hon. Russell Gurney.
Lieut.-General Sir J. Yorke Scarlett, K.C.B.
Lieut.-General Henry Eyre.
Colonel Lowder, C.B.
Captain the Hon. J. C. W. Vivian.
John Lloyd Wharton, Esq., *Secretary.*

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Colonel Edmund Henderson called in and examined.

2939. (*Chairman.*) What office do you hold connected with civil prisons in England?—I am the chairman of the board of directors of convict prisons.

2940. And with regard to military prisons what office do you hold?—I hold the office of inspector-general of military prisons.

2941. What was the date of your appointment to the board of directors of convict prisons?—1863.

2942. And before that I think you were connected with prisons in Australia?—I was comptroller-general of the convict department in Western Australia.

2943. Does that appointment of inspector-general of military prisons give you any real control over the military prisons?—It is simply an advising appointment; I have no executive power. I merely advise the Secretary of State upon such matters as he submits to me.

2944. And you have no real control over the management or conduct of the military prisons?—Only so far as the Secretary of State asks for my advice.

2945. You have inspected all the military prisons since your appointment, I have no doubt. Do you think that the military prisons are fit places in point of construction for the infliction of severe sentences of imprisonment?—The military prisons vary much in point of construction. The principal ones at Aldershot, at Fort Clarence, and smaller one at Shorncliffe are wholly deficient in what ought to constitute a good prison. The prison at Aldershot is simply a collection of huts in which the men live in association and are worked in association. There are no cells whatever, except three, which you can scarcely call cells; they are fitted up in one of the huts. The prison at Fort Clarence, which is, in fact, where the old casemates are, is quite unfit for use as a prison; and the prison at Shorncliffe is very much the same as that at Aldershot. The other prisons, so far as they go with regard to the amount of cell accommodation, are very fair.

2946. You have mentioned the prisons at Aldershot, Shorncliffe, and Fort Clarence; what are the other prisons?—There is Gosport, which I think is probably the best.

2947. Was that built for a prison?—That was built for a prison on the cellular system. Then there are Devonport, which is a small prison, but that is entirely similar; and Weedon, which is a very fair prison; and the new prison at Southwark.

2948. (*Lt.-Gen. Scarlett.*) That was formerly the Queen's Bench prison, was it not?—It was formerly the Queen's Bench prison. It was proposed to build a cellular prison at Aldershot, and there has been a sum of 5,000*l.*, I think, taken upon the estimates for this year for that purpose. I think that as far as the appliances and means of the military prisons go, the discipline is in a sound and wholesome state; but of course punishment in association is not punishment in the true sense of the word.

2949. (*Chairman.*) You consider that it is an essential point to have a prison arranged upon the cellular system?—Clearly. That, in my opinion, is the whole essence of punishment. It is that which the men dislike the most.

2950. And without that it is impossible to inflict a sentence for which the men really care?—I think so decidedly, and I think that that is the opinion of every one who has seen those associated prisons.

2951. Besides the want of cellular arrangement, is it not the case that from the great subdivision of the military prison accommodation it happens that there are a great many prisoners always employed in light labour about the prison; for instance, in the kitchen and in the bakehouse, and generally in light tasks which are no real punishment?—Yes, that is unavoidably the case. Of course the prisoners have to do all the work in the prison, and of course the smaller the prisons the more are the men so employed, and that cannot be called severe punishment.

2952. I see that the military prisons are most of them (five out of six I think) in the south of England. Would it in your opinion be a good plan to concentrate the whole of the prisoners in one well arranged prison built for the purpose, and where you could carry out a strict system?—There is no question that it would be a very great advantage. The discipline of the military prisons at present depends very much upon the governor. The visitors are always a fluctuating body, and they may or may not take an interest in the prison work; and of course in a single prison you can carry out a definite form of punishment very much better than you can in a number of isolated prisons.

2953. In fact the real government of the prison rests with a fluctuating body at present, does it not?—At present it does to a great extent.

2954. And I presume that the punishment, as regards the severity of the sentence, varies very much in the different military prisons?—Very much at present from the association which they are in in the majority of them.

2955. Can you form any idea of the expense of constructing a prison on the cellular plan?—It varies very much, but I should think at a guess you could do it from 100*l.* to 120*l.* a cell.

2956. Would it amount to so much as that if you used convict labour in the construction of it?—No, it would be very much less in that case.

2957. Could you do it for half that sum, do you think?—Yes, I should think you could do it for 60*l.* or 70*l.*, certainly.

2958. You have had some experience in constructing a prison by convict labour, I believe, recently?—

Yes, I am building one now for 700 prisoners, which will be built for about 42,000*l.*

2959. (*Lt.-Gen. Scarlett.*) Is that to be a military convict prison?—No, it is to be a female convict prison.

2960. (*Chairman.*) Do you agree in the policy of inflicting sentences of penal servitude upon soldiers for purely military crimes?—No; I have always thought it decidedly a mistake. I do not think that any court-martial ought to have the power to sentence a man to penal servitude. I think that it would have a much better effect if they sentenced them to long terms of imprisonment, and if those sentences were carried out in the same prison in which the shorter sentences are inflicted. At present when a man is sentenced to penal servitude he goes away to a convict prison, and he is lost sight of, and the effect upon his comrades is entirely lost, and for himself, from the very fact of his going to a convict prison he is more or less demoralized for the service. I think that very few commanding officers wish to have such men back, although in that respect I believe among the soldiers there has been a considerable change of late, and they are very much more anxious to rejoin their corps than they used to be.

2961. (*Lt.-Gen. Scarlett.*) Would you have every man discharged who is sentenced to a long term of imprisonment?—No, I would not; and I do not think that it would be necessary if you had them in a strictly military prison.

2962. Then would there not be an objection that as the man was still on the strength of the regiment, his comrades would be doing his work during this long imprisonment; as he would still remain a member of the regiment, unless his place was filled up by a recruit, the good men would have to do his duty while he was in prison?—I presume that that is unavoidable so far; but I think it is a mistake to hold out to a man that he is, as you may say, entitled to be discharged when his imprisonment is over.

2963. (*Chairman.*) What is the duration of the greater number of sentences which come into military prisons?—The average duration is short. I do not know of the exact figures, but I should think 100 days would be the average. Long sentences are exceptional.

2964. Would three months' sentences be about the average?—Three months would be about the average I should think; but I could not speak certainly upon that point.

2965. Do you think that it would be advisable to make any change in the diet with a view of making those short sentences more severe?—The dietary at present in military prisons appears to give satisfaction, but I certainly think that for short sentences it might be quite possible to make it more penal in its nature than it is.

2966. Is it higher than the dietary for short sentences in civil prisons?—I should think that it was. I am speaking of the county prisons and not of the convict prisons.

2967. Do you believe that the visitors of a military prison have still the power of inflicting corporal punishment for a prison offence?—Certainly. So far as I understand, the resolution which was passed in the House of Commons merely affects the power of courts-martial to inflict corporal punishment.

2968. Do you hold it to be absolutely necessary that that power should be retained?—I think that it is certainly decidedly necessary in a prison, although it is a punishment which now is only resorted to in the convict prisons in the case of brutal and premeditated assaults and in the case of mutiny accompanied by violence. Where you have to maintain very severe and strict discipline I think it is necessary to retain that power.

2969. (*Lt.-Gen. Scarlett.*) Could you suggest any punishment in the place of it if it were done away with, which would be equally efficacious, or nearly as efficacious?—I think that separate confinement as it is now carried out in convict prisons in a great many instances (I will not say in all) is a more deterrent punishment to many men than actual flogging.

2970. (*Chairman.*) That is to say it is more deterrent than actual flogging if it had been administered outside the prison?—Precisely.

2971. (*Lt.-Gen. Scarlett.*) Do you think that upon the remainder of the men a punishment of that sort has much effect; do you think that imprisonment is deterrent to a man's comrades?—I think that imprisonment is, if it is rigidly carried out.

2972. How do the men of the regiment know that it is so carried out, unless they have suffered it themselves?—That would be the advantage of a central prison, where the fact would become generally known.

2973. (*Chairman.*) The objection has been raised against a military prison, that it would involve the conveyance of soldiers backwards and forwards, and people have an idea that it is not a good thing to let the public see soldiers being conveyed to prison; is there any reason why that should continue to be the case?—None at all that I see. A man when he was sentenced to imprisonment should be put into a prison dress at once, and should be taken away to prison by a warder sent from the prison for the purpose. It would involve no more expense and would avoid all exposure to the public.

2974. In fact now the expense is greater under the present system, because I think they send more than one man to take a prisoner to one of the military prisons, do they not?—It takes three, a corporal and two men.

2975. How many men do you take to send a prisoner to one of the convict prisons?—One is quite sufficient. If there is any fear the prisoner would simply be handcuffed to the warder.

2976. I think you do not send more than one warder with two prisoners, do you?—We generally move the prisoners in large batches; we very seldom move them singly; but one man would be ample to take care of two men handcuffed together.

2977. What proportion do the warders bear to the prisoners in moving the prisoners from one prison to another?—Under a dozen you would send two warders, and above that three, and so on; one additional warder to every ten men.

2978. (*Capt. Vivian.*) Are they armed?—They have simply side arms.

2979. (*Lt.-Gen. Scarlett.*) Do you send them by the common trains or by prison carriages?—By the common trains, and we never, that I am aware, lost any prisoner in the transit.

2980. (*Chairman.*) In the convict prisons on public works what number of warders are required to take charge of a working party of prisoners?—The general allowance of warders to prisoners is about ten per cent.

2981. In the military prison at Aldershot do you know what proportion of guards there are to the prisoners?—I do not think I can give you that information, but I can obtain it.

2982. Have there been several instances of escape from the prison at Aldershot?—There have been a few.

2983. (*Lt.-Gen. Scarlett.*) From the prison?—From the works.

2984. Not from the prison itself?—No.

2985. But from gangs of prisoners out at work?—Yes. I do not recollect a case of escape from the prison itself.

2986. (*Chairman.*) Have there been more than there should be in a well conducted prison on a larger scale?—I hardly know that. It is difficult to answer that question.

2987. Under what circumstance is remission of sentence granted to military prisoners?—At present the remissions that are granted are, so to speak, entirely arbitrary; and my own opinion is that no remission should be granted except on a fixed scale, and that the men should earn that remission. I think it would be a great point to hold out to the men that it is a great thing to earn their discharge from prison.

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2988. You think that remission should depend upon conduct in prison?—Upon work; and that they should forfeit any remission they gain by work for misconduct. That of course would not interfere with the power of the Commander-in-Chief to remit the sentence of any man if he saw fit on grounds connected with his conviction; but I refer simply to conduct in prison.

2989. (*Lt.-Gen. Scarlett.*) Are not the men classed in prisons?—Yes.

2990. Are not the men of the first class allowed greater latitude than those of the second and the third classes?—They are.

2991. (*Chairman.*) Does a prisoner memorialize for a remission of the sentence, or how does he set about getting it in the military prisons?—In the convict prisons he petitions the Secretary of State, and I presume in a military prison he would address the commanding officer of the regiment.

2992. I presume that the cost of the staff in one central prison would be very much smaller than the cost of the united staffs of all the six military prisons at present?—Of course it would. The same number of men would be required.

2993. And you do not think the cost of conveying the prisoners to and fro would be a serious element in the calculation?—I certainly do not, considering that all the military prisons, certainly in the south of England, are within a very few hours of each other by rail.

2994. If you had a prison of that sort you would be obliged to have it attached to some large public works?—That would be a very great advantage, because you cannot carry out separate confinement beyond nine months, and after that you must work the men in association more or less.

2995. But even when they are worked in association you recommend that they should go back into the prison to their separate cells?—Certainly.

2996. So that they should not have any communication with each other?—Yes.

2997. And that in your opinion is the severe element in the punishment?—Certainly.

2998. (*Capt. Vivian.*) Do you confirm the evidence given the other day by a witness who said that the severest punishment he thought to which a soldier could be subjected was being put upon the bread and water system?—There is no question that the bread and water system is a very severe punishment, but it is one that you cannot carry to any very great extent.

2999. For what reason?—You break the man down if you give him too much bread and water. It merely answers as a prison punishment.

3000. But I suppose it is the severest prison punishment which you have at present in the military prisons, is it not?—It is, if it is coupled with separation.

3001. You have no dark cells at Aldershot, have you?—No. One hut has been divided into three parts, that is all the cells they have there.

3002. They are not dark cells?—They are not dark cells, they can talk through the boards.

3003. (*Chairman.*) The punishment of dark cells is, next to corporal punishment, the severest form of prison punishment, is it not?—It is, and in most cases it is more severe than actual flogging.

3004. To what extent are you empowered by law to award dark cells?—I think it is three days at a time.

3005. That is a punishment of which even the most voilent men have a very great dread, is it not?—No doubt.

3006. When once they have undergone 24 hours dark cell, they have a very great dread of returning to it again, have they not?—Yes.

3007. Do you think that the imprisonment, as it is now carried out in military prisons, has much effect in checking drunkenness?—I have not the statistics of drunkenness in the army, but there is no question that the number of commitments for drunkenness has enormously increased. It has increased from 703 in 1847 to 1,926 in 1867.

3008. (*Lt.-Gen. Scarlett.*) Is not that more from its being brought into notice from the trial for the fourth time of drunkenness being insisted upon?—That of course swells the number in the military prison.

3009. Then you do not argue altogether that drunkenness has increased in the army?—No. I have not the whole statistics of the army, that of course we do not get; but I think the general opinion is that imprisonment after a certain time ceases to have much effect in checking drunkenness; I believe the great check to drunkenness is to take away from the soldier the means of getting drunk, that is to say, by mulcting him of his pay and confining him to barracks.

3010. (*Chairman.*) Are you also the inspector of the military prison at Lewes?—No; that is entirely under the Admiralty.

3011. You have no control of that prison?—No.

3012. Can you give the Commission any notion of the value of the labour which you can get out of the prisoners on public works?—On some descriptions of work you can get very good value for your labour. I think at Chatham last year the expenses of the prison were 34,000*l.*, and the actual earnings of the convicts were over 40,000*l.*, including that in the interior of the prison.

3013. Do you mean that the prison at Chatham paid for itself last year with a balance over?—It more than paid for itself. The men are there employed on very remunerative work, that is upon making bricks for the Admiralty, and they are valued simply at the cost price that the Admiralty would have to pay for them to an ordinary contractor, so that it is actual value.

3014. Would it be possible in your opinion to get any return from soldiers confined for military offences?—You might get a certain return, but the majority of the imprisonments are short, and of course labour in the cells is not very remunerative, though in some cases it is so. In the civil prison at Wakefield they make mats, and I believe they get a very fair return for their labour; but the majority of the work in cells is not, so to speak, remunerative.

3015. Do you think that it is an advantageous part of the prison discipline to have remunerative labour for the prisoners?—I think it is to a certain extent a secondary consideration, especially with short sentences. The great point there is to make the punishment deterrent. The remunerative part of it is in my opinion a secondary consideration; it should, of course, not be lost sight of, but I do not think it should interfere with the nature of the punishment that you inflict.

3016. Do you observe in your prison returns the immense quantity of re-convictions for the second, third, and fourth times to the military prisons?—The returns show a very large proportion of re-committals, and that I think bears out the opinion that is very widely expressed that after a certain time those short sentences lose their effect, as at present administered at any rate.

3017. (*Lt.-Gen. Scarlett.*) Do you allude to military prisons?—To military prisons. The proportion of re-committals is very large, especially as compared with these to the convict prisons.

3018. (*Chairman.*) Yo have had considerable experience in the army, did you ever form any opinion as to whether it would be desirable to give more power to the commanding officers, so as to avoid such a number of regimental courts-martial?—Yes, I have a very strong opinion upon that subject; I think that a soldier should be led to think that a court-martial is a very serious thing, and I think myself that any commanding officer who is fit to be intrusted with a regiment is fit to be intrusted with the same powers as are now given to a regimental court-martial, and I would have no punishment short of at least 42 days inflicted by court-martial, and for that I would have a district court-martial.

3019. (*Capt. Vivian.*) So that you would do away with regimental courts-martial altogether?—I would do away with regimental courts-martial altogether.

3020. And increase the power of the commanding officer?—Yes, I would increase the power of the commanding officer.

3021. (*Lt.-Gen. Scarlett.*) Do you known what powers are intrusted to the French commanding officers?—I do not.

3022. (*Chairman.*) What is the average number of prisoners in confinement in the military prisons in England?—The average number, I think, you may take to be from 900 to 1,000. I am speaking there of the military prisons merely in England, without reference to Ireland.

3023. Of those which you would consider it advisable to concentrate?—Yes.

3024. Can you give me also the number of prisoners in the convict prisons in England for military offences sentenced by courts-martial?—About 100 at present, I should think.

3025. Your object would be to confine them all in one prison, so that when a man came in for a short sentence he should see those who had already been there a long time undergoing a very severe discipline?—There can be no question that it would have a very deterrent effect in my opinion.

3026. Instead of losing sight of them altogether when they go to the convict prisons?—Quite so.

3027. (*Lt.-Gen. Eyre.*) If I understand the present state of prison statistics they show rather a tendency to an increase in the number of military prisoners; is that so?—I think it is.

3028. What do you think that indicates as regards the discipline and the effect of the punishment?—The number of the prisoners is very much swelled by the system at present in force, under which men who are drunk more than four times in the year are tried by court-martial. That has increased the number very much. I do not think that other crimes have increased very much, speaking from memory.

3029. On that particular subject have you been able to form an opinion as to the soundness of that plan?—I think that after a time imprisonment ceases to have much effect in preventing a man from getting drunk.

3030. But to the practice which is now imperative, of trying a man every fourth time, have you any opportunity of judging whether that is desirable?—In my own opinion it is not a good plan. I think it would have a far better effect, as I said before, to deprive the man of the means of getting drunk.

3031. Do I rightly understand that you think that crimes which are purely military should not be treated in the same way as those which are included in the ordinary code of morals, and that the punishment should be different?—Certainly. I do not think that a military offence ought to be made a felony; it is not a felony.

3032. What, in your opinion, is the most effective punishment in a case requiring immediate and severe treatment; in such a case, for instance, as an act of gross insubordination, stricking an officer, keeping in view the example to others as well as the punishment to the man?—In the absence of course of corporal punishment, short of cruelty, you have no alternative but to lock a man up in a cell, and there to keep him till you can try him.

3033. (*Chairman.*) Would you think that a sentence of a day's dark cell or two days' dark cell would be a deterrent punishment at the commencement of a man's imprisonment?—I should prefer keeping sentences to dark cells for punishment in the prison as a prison punishment.

3034. (*Capt. Vivian.*) What objection do you see to its being included in the sentence?—Simply that it deprives you of all your power of dealing with the man after he gets into prison.

3035. But why should it follow that because a man is sentenced as part of his punishment to suffer, say three days' dark cells to commence with, afterwards, in the course of his punishment, he does not conform to the prison discipline, you should not then as governor of the prison again sentence him to it?—I do not see any very strong objection to it.

3036. (*Chairman.*) Practically you do not inflict the sentence of dark cells imprisonment for three days, but you merely keep a man there till he breaks down in his insubordination?—Yes.

3037. And you let him come out as soon as he is willing to behave himself again?—Quite so. You keep that in fact as your *dernier ressort.*

3038. What are the punishments inflicted in military prisons? Shot drill is one, is it not?—Shot drill is the principal punishment, and oakum picking.

3039. Is the oakum given them in the junk?—In the junk.

3040. Do they have to separate it themselves?—They have to separate the strands themselves and then to pick it.

3041. That makes oakum picking really hard labour, does it not?—I think oakum picking may fairly be called hard labour when given in that form.

3042. But the separation of the strands requires some amount of force, does it not?—It requires a considerable amount of exertion.

3043. They have no crank, have they?—There are no cranks in the military prisons now.

3044. And no treadmills?—No treadmills.

3045. And no other form of severe labour, except short drill?—Short drill is the principal.

3046. Do you think it is a good plan having recourse to shot drill only?—No, I cannot say I have a very high opinion of shot drill as a means of punishment.

3047. (*Lt.-Gen. Scarlett.*) What would you propose in the place of it, or as an additional punishment?—It is my opinion that all short sentences should be spent in separate confinement with the cell crank, or in such other occupations as you could get for them in the cell; and no sentence under nine months should, in my opinion, be spent in associated labour; after that you must of course put them in association.

3048. (*Chairman.*) In point of fact shot drill is associated labour, is it not?—Yes.

3049. They keep silence, but it is a relief from the cell life?—It is a relief from the cell life.

3050. (*Capt. Vivian.*) But silence is theoretically kept, is it not?—It is theoretically kept to a considerable extent, but still there must be some communication. A man goes to that directly he goes into prison, and he sees all his comrades around him, and it detracts very much indeed from the value of the punishment.

3051. (*Chairman.*) Do you think it a good plan to employ soldiers in work in the camp in the sight of the other troops?—I cannot say that I do. They have been so employed at Aldershot, and have done very good useful work there; and considering the nature of the prison at Aldershot, I do not think that they can be better employed; but I doubt very much whether as a mode of punishment it is a good one to employ them about the camp in the midst of all their comrades.

3052. Is it not the fact that the convicts were removed from the dockyards mainly on the ground that communications and traffic passed between them and the civilians?—That was one of the very strong objections to their being employed in dockyards.

3053. And that lessened the punishment, did it not?—There is no question that it did so. The prisoners at Aldershot must be in constant communication with their comrades; they get tobacco planted for them, and so on.

3054. (*Lt-Gen. Scarlett.*) They do not mix much with them?—They do not.

3055. (*Chairman.*) You would like to have them more employed in some public work quite out of sight of their companions?—Isolation is the great thing.

The witness withdrew.

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CAPTAIN FOLLIOTT POWELL called in and examined.

3056. (*Chairman.*) You are governor of the convict prison at Chatham, are you not?—Yes.

3057. How long have you been connected with the convict service?—Nearly 12 years.

3058. Have you been during the whole of that time at Chatham?—No; I was three years and a half at Portland as deputy governor and since then I have been at Chatham.

3059. I think that at Chatham you have convicts who are sentenced by courts-martial in your charge?—We have.

3060. All military prisoners who are sentenced to penal servitude are sent to Chatham after they have undergone a period of separate confinement, are they not?—Yes.

3061. Where do they undergo that?—Either at Millbank or Pentonville.

3062. I think they have nine months of that?—Yes, nine months.

3063. And then they are sent to Chatham?—Yes, I think that some few Roman Catholic convicts were at one time sent to Portsmouth.

3064. Do you put them into a separate division?—They are worked in separate parties, and all put in one division together.

3065. (*Capt. Vivian.*) How many prisoners have you generally at Chatham on an average?—At present the total number is about 1,350.

3066. (*Lt.-Gen. Scarlett.*) What would be the proportion of military prisoners?—About 100, but I speak under correction.

3067. (*Chairman.*) Do you find the military prisoners as useful on public works as the others?—Quite so.

3068. Do you concur with the last witness in thinking that separation on the cellular system is an absolute requirement of a strict prison discipline?—I do.

3069. There is nothing that the men value so much as association, is there?—Nothing. You cannot carry out total separation beyond nine months for sanitary reasons.

3070. But even on public works the moment the men have finished their work they go back to the prison and each is sent to his cell?—That is so, and they also have their food in separation.

3071. That is to say that they take all the food which they take in the prisons separately, but I think you give some food on the public works?—No, none whatever. They are marched back to prison for their dinners in the middle of the day. They breakfast before they go out to work at a quarter before six in the morning.

3072. You have no cell cranks at Chatham, have you?—None.

3073. At Pentonville have they any?—I am not perfectly certain, to the best of my belief they have not; but I speak under correction.

3074. In what way are they employed then at Pentonville?—In mat making, shoemaking, tailoring, and employments of that character.

3075. Each man in his own cell and out of the view of the others?—Yes.

3076. Are they very glad to exchange the public works for that kind of imprisonment?—I think that the military prisoners as a rule are. I will not say that all the ordinary prisoners are, for some of them are men who have never done a hard day's work in their lives, and they hate it. The military prisoners are a more active body of men, and I have no doubt they generally are glad to get to the public works.

3077. Do you know any reason against the use of the crank in the cell?—I have never had any experience of it, so that I do not feel capable of giving an opinion on the subject.

3078. Colonel Henderson has told us that the prison at Chatham has more than paid its cost; does that include the cost of the staff as well as the maintenance of the prisoners?—It includes every possible expense. In Colonel Henderson's statistics, he included the labour in the interior of the prison, such as baking and cooking, washing, &c.; but Chatham prison for the last two years has paid all its expenses, by the value of the labour of the convicts on the public works alone, exclusive of those employed in the prison.

3079. They are chiefly employed, I believe, in brickmaking at Chatham?—A certain number are during the summer season, but the rest are principally employed in navvy work, forming new docks and building walls on the river, excavating earth, unloading barges of clay and sand for brickmaking, &c.

3080. (*Lt.-Gen. Scarlett.*) That is really hard work, is it not?—Yes, the men are earning at it an average of nearly half-a-crown a day, one man with another, by measured labour.

3081. (*Chairman.*) Are the Admiralty satisfied with your estimate?—I have never heard it disputed.

3082. Do they have an officer who measures it?—A schedule of prices have been agreed upon between the Admiralty Department, the War Department, and the Convict Department, and all our work is measured and priced according to that schedule.

3083. With regard to the bricks which they make, have they given satisfaction?—I believe they have given every satisfaction.

3084. They are used in the works?—Yes.

3085. (*Lt.-Gen. Scarlett.*) Do the prisoners themselves receive any remuneration?—A well conducted prisoner can earn as much as 3*l.* to be given on his liberation by instalments, and if he is an extraordinarily well conducted man he can be specially recommended for an additional 3*l.* That only applies to ordinary convicts. The military prisoners would earn about 3*l.* possibly, and it would go to their commanding officer for their necessary expenses.

3086. That is if they return to their regiments?—Yes.

3087. (*Capt. Vivian.*) How long do they take to earn 3*l.*?—They can just earn it in a five years' sentence.

3088. (*Chairman.*) But I believe now that they cannot earn any more if they have a ten years' sentence?—No.

3089. They cannot get more then under any circumstances?—No.

3090. Are you acquainted with the military prisons?—No, I have had no experience of them.

3091. But I think you could give an opinion as to whether it is possible to carry out a really severe system of prison discipline when you only have a very small number; do you think that it is possible?—I do.

3092. Is it not the case that so many men are necessarily employed about the cleaning of the prison and light labour of that sort, that you cannot really inflict a severe sentence in a prison which only contains a very small number?—There would be a difficulty if there were no long-sentence men included in that number to employ upon the lighter description of work. Our rule is that a man must be well conducted for a certain period before he can be employed in any lighter work.

3093. For what period?—He must have undergone nine months' separate confinement to begin with before he comes to us, and he must have undergone from at least three to six months' imprisonment on public works with good conduct, before he would be allowed to enter any of the lighter employments. That is the rule which I have adopted.

3094. (*Capt. Vivian.*) Do the men who come to you after their nine months' separate confinement come with a good or a bad character from their prison?—Always.

3095. And according to that I suppose you class them in the first, second, or third class?—They must in all cases serve 12 months in what is called the probation or lowest class. Then, if they have been

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perfectly well conducted for 12 months in that class, both in separate confinement and on the public works, they get into the third class. They then must be at least one year in the third class without committing any offence before they can get into the second class; and in like manner they must undergo another year before they can get into the first class.

3096. (*Chairman.*) What is your opinion with regard to the punishment of the dark cells; do you look upon it as a very deterrent punishment?—It is deterrent certainly as a rule, but some men will stand three days and almost laugh at you.

3097. (*Lt.-Gen. Scarlett.*) What punishment do you inflict for very violent insubordination?—Corporal punishment for attacking an officer, or very mutinous conduct.

3098. Do you consider that that is absolutely necessary?—I think that in a convict prison it is absolutely necessary.

3099. (*Chairman.*) Not having the power to discharge them out of the prison, you must deal with them by severe measures in the prison?—Just so.

3100. But is it not a very rare instance in which a man does not give in under confinement in dark cells?—I should say that in four cases out of five it would be very deterrent.

3101. Is it quite sufficient without recourse to corporal punishment?—Not in a convict prison.

3102. (*Lt.-Gen. Scarlett.*) Then you consider corporal punishment as the severest and the most deterrent punishment which you can employ?—I have no doubt of it.

3103. (*Capt. Vivian.*) Do you adopt the bread and water system?—Yes, and a director has the power of inflicting 28 days punishment diet. Punishment diet consists of bread and water for three days, and then a diet of porridge and potatoes for one intervening day.

3104. Do you find that a very effectual punishment? They dislike it very much.

3105. (*Chairman.*) Have you been speaking of entirely dark cells, or of only what are called obscure cells?—I have been speaking of entirely dark cells as regarded the three days.

3106. But you have known cases in which men are able to stand that?—I am sorry to say a great many.

3107. Do you share Colonel Henderson's opinion, that it would not be desirable in any case to let dark cells form a portion of the original sentence?—I should not myself consider that to be very material, so long as the governor of the prison has the power of inflicting it afterwards.

3108. Your are limited to three days by law, are you not?—We are.

3109. (*Capt. Vivian.*) What limit is there to your infliction of corporal punishment as a prison punishment?—It is only inflicted by order of a director, and 36 lashes is the amount which can be given.

3110. (*Chairman.*) You have to apply to London then to get an order?—A director almost invariably comes down and enters into the case himself.

3111. If there is a sufficiently bad case you inform the board of directors and one of the directors comes down?—I report the circumstances to the directors with the evidence, and one of them comes down and adjudicates upon the case.

3112. What number of cases have you in a year where you resort to corporal punishment now?—It has varied very much. You may recollect that some years ago there was an outbreak at Chatham prison; of course that was an exceptional case, but I think that for upwards of two years after that we had not a single corporal punishment; since then, speaking under correction, I should say that we have had an average of about a dozen a year.

3113. You are aware that the convicts were removed from the dock yards mainly to keep them out of contact with civilians?—That was one reason.

3114. And that they trafficked with the people in the dockyard?—They do so if they have the power to a very great extent, and highly objectionable it is.

3115. Do you think that it is a good plan to employ them in the camp in sight of their comrades?—I shoud say certainly not as an opinion.

3116. It must lighten the sentence to the individual and perhaps do away with the idea of its being so severe a punishment in the eyes of those who look on?—That is quite my opinion.

3117. Do you think that seclusion is the great point to be aimed at?—I do.

3118. (*Lt.-Gen. Scarlett.*) Do you think that the prison dress and the segregation of the men under the warders at work has no effect upon the troops as a deterrent?—I should consider separation much more deterrent.

3119. *Lt.-Gen. Eyre.*) Are you able to account for the apparent tendency to increase in the number prisoners committed just now to prisons?—I was not aware that there was an increase in that number.

3120. My impression is that the present state of the statistics is that there is an increase?—It must be quite lately, for there has been a decrease within a year or two in ordinary offences; however, it is very possible that quite lately such may have been the case; but, if so, I am not aware of it, as my prison is almost always kept full.

3121. But your practical knowledge of punishment will enable you to answer the same question as I put to a previous witness, which was this: Do you consider that crimes purely military should not be treated in the same way as those included in the ordinary code of morals, and that the punishment should be different?—I think it would be desirable.

3122. In Prussia for cases requiring very summary and sharp practice they have a kind of cell in which a man cannot remain in one position; have you any means of expressing an opinion in regard to the efficacy or desirableness of that?—I have no means of expressing an opinion from personal knowledge, but it is a cruel system that I should not like to see adopted in any of our prisons. I should shrink from it myself.

3123. Then what, in your opinion, is the most ready and suitable punishment for very bad cases of that sort requiring instant notice?—In the absence of corporal punishment I can only suggest a drum-head court-martial and immediate removal to imprisonment made as uncomfortable as possible short of cruelty.

The witness withdrew.

Capt. W. J. Stopford.

Captain Walter James Stopford called in and examined.

3124. (*Chairman.*) You are the governor of the convict prison at Portsea, are you not?—I am.

3125. Have you any experience of military prisons?—No, except from visiting them occasionally when I was in the army.

3126. Did you share the opinion which has been expressed by Colonel Henderson and Captain Powell, that it is absolutely necessary for a strict system of discipline to have a prison constructed upon the cellular plan?—Certainly.

3127. But without that you cannot make a short sentence really deterrent?—No, I am sure you cannot.

3128. What form of punishment have you in the convict prison at Portsea?—It is the same as all other convict prisons.

3129. It is a public works prison, is it not?—It is.

3130. You have no employment in the cells?—None; I was governor of Dartmoor convict prison for two years, and I had employment not exactly in the but in association in sheds, in picking oakum and basket making. It was light labour.

3131. That was almost entirely for prisoners who were not supposed to be physically able to undergo a severer sentence, was it not?—Yes.

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3132. Do you think that it would be possible to carry out a really severe sentence in a prison which only contained 100 or 120 men?—I do.

3133. What proportion of them would be employed about the prison itself in light labour; would not a large proportion of them be so employed?—I should think not. I should think three would be quite enough as cleaners.

3134. What military prison have you inspected?—I have inspected several during my service. I have been at the Arbour Hill prison, in Dublin, but that was 15 years ago.

3135. Do you think that the military prison system there was severe?—It was at that time.

3136. Were they confined to cells?—I believe they were; whenever I have seen them in the prison I have seen them in the cells.

3137. But are you aware that in three military prisons now they have hardly any cells for separation?—I was not aware of that; I am speaking of about 15 years ago.

3138. Do you see any objection to making a certain period of dark cells part of the original sentence?—I can see no objection to it.

3139. In your experience has it a very deterrent effect?—Yes, I think it has.

3140. Next to corporal punishment it is the severest prison punishment, is it not?—If combined with the handcuffs it is. I consider the most deterrent punishment next to corporal punishment to be dark cells, in handcuffs.

3141. For what length of time are you allowed to inflict that punishment?—For 72 hours.

3142. And at what intervals may you repeat that sentence?—I am not sure that there is any period laid down, but I should not take upon myself to repeat it certainly under three or four days' interval, and I have only resorted to it in cases of violent conduct with insubordination, refractory cases.

3143. Do you find it sufficient punishment to most men, and that it is effective in bringing them round?—I think with the handcuffs it is, but I do not believe that it is at all a substitute for corporal punishment in prisons, though I consider that it is next to corporal punishment in its deterrent effects.

3144. What number of prisoners have you at Portsea?—I have 960.

3145. And what is the average of the sentences of corporal punishment in the prison there?—I can hardly tell you that, for I have been there only about a month; but at Dartmoor I had about 630. I should think that my average number of corporal punishments were about eight or nine in the year.

3146. (*Mr. Russell Gurney.*) For what offences generally is corporal punishment inflicted?—For open and violent assaults upon the warders.

3147. (*Chairman.*) Do you think it is possible or advisable to have more recourse to a diet of bread and water than is now done?—I should think not longer than 28 days at a time, which the directors give now.

3148. Do you often have recourse to it as a punishment?—I have recourse to bread and water punishment every day for short periods.

3149. (*Capt. Vivian.*) You put the prisoner upon what is called punishment diet?—Just so, that is bread and water.

3150. (*Chairman.*) And that is a punishment which they feel very much, is it not?—They do not like it. I suppose they feel it. They feel a long protracted period of bread and water, I know. The governor can only give three days' bread and water at a time, and the directors can give 28 days.

3151. (*Lt.-Gen. Scarlett.*) After 28 days do the men come out very much impoverished and unable to work?—They are of course rather weak from the punishment, but not very much so.

3152. But would you put them to the same labour as they previously were at?—They go to the same labour, but I have generally adopted the plan of telling the warders not to be too sharp upon them for the first two or three days.

3153. (*Viscount Eversley.*) Do you find them equal to the same labour after this diet?—Hardly equal.

3154. (*Lt.-Gen. Scarlett.*) Do you think that a soldier would be able to do his duty in the ranks after 28 days bread and water?—I should think he would certainly fall out after an hour's drill in heavy marching order.

3155. (*Chairman.*) But if he was retained in prison after his 28 days' bread and water, supposing it was a sentence for 42 days, by the end of that time he would be fit to work again if he went on the ordinary prison diet afterwards, would he not?—Quite so, I should think.

3156. And it would be a very deterrent sentence, would it not?—I think it would.

3157. You have no military prisoners in your prison, have you?—Yes, but not treated as such.

3158. (*Lt.-Gen. Eyre.*) Was not Dartmoor an experimental prison?—No; it was an invalid prison.

3159. What does that mean?—The men who are considered not to be actually fit for public works, that is to say, for such works as they are doing at Chatham, Portsmouth, and Portland, were sent there.

3160. (*Lt.-Gen. Scarlett.*) Have you any civilians working side by side with the convicts?—We have in the neighbourhood.

3161. What comparison would you make between the work done by the convicts and the work done by the hired men?—There are very many opinions about that. My opinion is that you can make a convict do just as much as a hired man under proper supervision, but he requires to be kept up to the mark, and so does the hired man as far as that goes.

3162. Do you in fact find at Portland, where they are employed on pretty much the same work I believe, that as much is done by 20 convicts as by 20 civilians?—I do.

3163. (*Capt. Vivian.*) What work do they do at Portland?—Brickmaking by steam machinery.

3164. Entirely brickmaking?—Almost entirely. There are men of course employed in carpenters' shops and blacksmiths' shops.

3165. Is that severe labour?—Brickmaking is very severe labour.

3166. (*Lt.-Gen. Eyre.*) Do you receive seamen in your prison?—Yes.

3167. Is there any difference with regard to the punishment awarded and carried out to them?—None.

3168. (*Chairman.*) What value do you think you get out of your prisoners at Portsmouth?—I should think that on an average each man earns 2*s.* per day.

3169. Have you made any return of the gross earnings of the prison in the last year or two?—A return has been made, but not by me, as I am a new comer there.

3170. But you get a great deal more value out of the public works at Portsmouth than at Dartmoor, where they work in cells?—Yes, it is more remunerative work. On Dartmoor we work also in the open air, but that is in reclaiming land for the Duchy of Cornwall.

3171. That is an agricultural operation?—Yes.

3172. (*Lt.-Gen. Scarlett.*) But that labour would be rather a pleasing occupation to the men, would it not?—It is pretty hard work, trenching and draining bog land.

3173. (*Lt.-Gen. Eyre.*) You have served in the army, and therefore you know well what cases arise requiring a very serious example?—I do.

3174. From your knowledge of those circumstances of military discipline, and also from your experience as the governor of a prison, and from your understanding punishments of all kinds, can you suggest anything at all applicable to cases requiring a prompt and effectual example?—Nothing is so prompt as corporal punishment.

3175. But that being out of the question, is there anything in lieu of it? There is in the Austrian army a punishment by which, in difficult cases, they bind a man in a cramped position for 24 hours, the

man being released for two hours after every six hours, the 24 hours including those reliefs; have you ever resorted to expedients of that kind in prisons?—What I have just mentioned is the nearest thing which I can think of to it, viz., to put a man in a dark cell with his hands behind his back in handcuffs.

3176. For how long?—We can give it for 72 hours, but whenever I have put a man under such punishment as that I have given instructions that he should be reported to me every six hours.

3177. Do you ever put him in for so many hours without relief of this kind, according to the Austrian plan?—I have put him in handcuffs for 72 hours, but not according to the Austrian plan.

3178. Do you consider that a very severe punishment?—I consider it very severe.

3179. Do you apply bread and water to it as well?—Yes.

3180. For how long?—Not more than three days with bread and water can be passed in a dark cell with those handcuffs.

3181. (*Capt. Vivian.*) You have the power to inflict that punishment yourself, have you not?—Yes.

3182. (*Lt.-Gen. Scarlett.*) Do you find that that generally subdues the man?—The irons will always subdue him.

3183. He is not anxious to go back again?—No, never. I have never seen one yet.

3184. (*Lt.-Gen. Eyre.*) From your knowledge as governor of a prison and as an officer, do you think that that would be an appropriate punishment in peculiar cases?—I think it is the most severe punishment that I have seen.

3185. (*Mr. Russell Gurney.*) Do you find that you have to inflict corporal punishment upon the same man more than once?—It is not generally done as a rule, although cases have occurred where the same man has deserved it.

3186. You feel that it would be useless a second time?—That is the general idea, I think. I think it is so myself. *Capt. W. J. Stopford.* 14 May 1868.

3187. Then it does not succeed in deterring him from the same offence?—Frequently it does not.

3188. Do you think that a man is more frequently deterred from the same offence by that, or by the bread and water and the three days in the cell?—Certainly they are more frequently deterred by corporal punishment.

3189. You more frequently have to repeat the other punishments, have you?—Yes, the imprisonment.

3190. With the dark cell?—Yes, we have to repeat that more frequently. We do not often have to repeat corporal punishment, but there are cases where the man deserves it, and in these cases he does not generally get it.

3191. You try something else?—Yes.

3192. (*Chairman.*) Do you ever repeat corporal punishment upon the same man more than twice in prison?—I could not speak for certain whether it has been done or not, if so it has only been in one or two cases.

3193. When you employ prisoners in gangs on public works, how many warders go to a gang?—I generally put about 10 per cent., as Colonel Henderson mentioned. We have 100 warders to about 1,000 men.

3194. One warder to 10 men?—Yes, that is the average; but we sometimes have a warder to 25 men, and on the other hand we may only have a warder for five or six, according as they may be employed; but I do not think that one man ought to have more than 25 under his charge.

3195. Are your dark cells so constructed that the prisoners cannot be heard?—They are.

3196. That is a great element in the dark cells, is it not?—Yes.

3197. They know that any noise they may make in the cell will not be heard outside?—Exactly. It is a great inducement to a man to make a noise if he knows that he is heard by his fellow prisoners.

The witness withdrew.

Adjourned to Monday next at 11 o'clock.

Aldershot, Monday, 18th May 1868.

PRESENT:

COLONEL THE RIGHT HON. J. WILSON PATTEN, IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL EYRE.
CAPTAIN THE HON. J. C. W. VIVIAN.
JOHN LLOYD WHARTON, Esq., *Secretary.*

SERJEANT-MAJOR A. called in and examined. *Serjeant-Major A.* 18 May 1868.

3198. (*Chairman.*) This is a commission to inquire into courts-martial and military punishments, and we are anxious to obtain the opinion of the non-commissioned officers and men at Aldershot on those subjects. Your name will not be given, and we hope that you will give your evidence in as independent a manner as possible. You are a serjeant-major, are you not?—I am.

3199. How long have you been in the army?—I have been in it 13 years and three months.

3200. How long were you a private?—About a year.

3201. How long were you a corporal?—I was in the band nearly three years, and then I was promoted to corporal; I was lance-corporal thirteen months, full corporal a year, serjeant a year, colour-serjeant six years, quartermaster-serjeant nearly one year, and then I was promoted to be serjeant-major, the rank which I now hold.

3202 In the course of your experience in those posts which you have now described, have you seen much of the system of courts-martial, and first of all of regimental courts-martial?—Yes, a good many.

3203. From your experience have you been led to believe that there is a feeling of satisfaction, or otherwise, amongst the non-commissioned officers and men of the army as to the justice with which those courts are conducted?—I should think that the non-commissioned officers of the army do not approve of the regimental courts-martial; there is many a non-commissioned officer who gets reduced to the ranks for a very simple crime, and it is a loss to him for the remainder of his service; whereas another soldier would get so many days confinement to barracks. There is no punishment for the non-commissioned officer unless trial by a court-martial.

3204. Do you think that the desire of non-commissioned officers is, that some punishment should be adopted to obviate the necessity of reducing them to the ranks?—Yes, just so.

3205. Could you suggest any punishment for non-commissioned officers?—There are two or three that I would name; one is by being tried by a court-martial. Supposing a serjeant was in his fifth, or fourth, or third year of service, he would be deprived for ever afterwards of obtaining the medal and gratuity for

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long service and good conduct, even if he served 25 years longer.

3206. (*Capt. Vivian.*) Notwithstanding that he is reinstated in his rank?—He would never gain it.

3207. (*Chairman.*) Is the whole term of service never counted on restoration to non-commissioned rank?—No, he can never obtain that. We had an instance of it in our own regiment; we had an old colour-serjeant who had been there, as man and boy, 24 years, and he was tried by regimental court-martial, and now on going away he has not got the medal and cannot get it, and will not get it.

3208. Do you believe that a non-commissioned officer would lose more influence in the regiment be being reduced to the ranks and restored subsequently to the post of non-commissioned officer, or from being punished as a non-commissioned officer without reduction? Which do you think would be looked upon as the most damaging to his character amongst the men whom he would have to command?—It would be a great loss to the non-commissioned officer, because if he is once reduced he has a penny a day good-conduct pay taken away for a certain length of time.

3209. But my question has reference to the influence which he would have in the performance of his duty over privates?—I do not think it would make much difference in that respect.

3210. Do you think that there would be no difference?—It would if his crime was a serious one, and it was a just punishment for him to be reduced to the ranks.

3211. Do you think that a non-commissioned officer who has been punished as a non-commissioned officer would not lose that respect on the part of the men which he enjoyed before?—He would decidedly lose it.

3212. But would he lose it more than if he were reduced to the ranks and restored subsequently to his former rank?—No.

3213. (*Capt. Vivian.*) That would depend upon the nature of the crime, would it not?—That would depend upon the nature of the crime.

3214. If a non-commissioned officer was found guilty of drunkenness, as a matter of course he would lose his influence amongst the men?—He would.

3215. But if he only overstayed his leave two or three hours it would not be so?—That would be a different thing.

3216. (*Lt.-Gen. Peel.*) You say that a serjeant when tried by court-martial can never afterwards attain the medal and the advantages which he would have had by not being tried by court-martial?—Never.

3217. It is the mere fact of his having been tried by court-martial that deprives him of those advantages, is it not, without reference to the offence which he may have committed, and without reference to the punishment?—It is the fact of his having been tried by court-martial.

3218. (*Chairman.*) You have spoken of the injurious effect which it has upon the non-commissioned officer when sentenced by court-martial—will you state whether you think that there is a feeling amongst the privates and the non-commissioned officers generally in the army that strict justice is done, generally speaking, and that the soldier has fair play?—Yes, he has very fair play. Unless the evidence is sufficient to convict him he has very fair play.

3219. (*Capt. Vivian.*) With regard to regimental courts-martial, is it the same?—Just the same.

3220. (*Chairman.*) Do you think that in the long run they get fair play?—They do.

3221. Supposing that a soldier has the choice, whether he will be tried by a civil magistrate or by a court-martial, which do you think that he would prefer?—Most likely being tried before a magistrate.

3222. Why do you think so?—Several soldiers are tried for drunkenness now. That is the crime chiefly tried by regimental court-martial. There might be a doubt about the man's being drunk, although two evidences would state on oath that he was drunk. He might have been drinking, but not have been exactly drunk, so that he would have to be tried by court-martial; whereas if the same crime was brought before the magistrate there would be perhaps a fine of 5*s.* or 10*s.*

3223. It is the punishment then that makes you think that he would prefer the civil tribunal?—Of course.

3224. (*Lt.-Gen. Peel.*) The fact of his being drunk or not drunk would be decided by court-martial, would it not?—If there were two evidences that he was drunk, and if he brought 20 to prove that he was not drunk, he would be convicted.

3225. (*Chairman.*) But do you think that a man tried for drunkenness would have a better chance of getting off before a magistrate?—I do.

3226. With regard to crimes which subject soldiers to penal servitude, do you think that they would prefer deing tried by a civil tribunal or by a court-martial?—By a civil tribunal, I should say.

3227. On what grounds?—Perhaps they would have a better chance of getting off or getting a lighter punishment.

3228. Do you speak from experience?—No, I cannot speak from experience of civil life; it is merely what I have read from the newspapers of the nature of crimes in civil life, and what I know of the nature of crimes in military life.

3229. Then from what you have read you believe that a crime committed in civil life is less severely dealt with by the civil tribunal than it is in the army by a court-martial?—I think so.

3230. Is it in your power to adduce any instances of that?—I could not remember any at present.

3231. Do you believe that a soldier feels, when he is brought up before a court-martial, that he has every justice done to him as regards any defence which he may have to make?—Yes, I think he does.

3232. Do you think that that is a general feeling amongst the soldiers?—Yes, I should say so. Before his trial comes on the soldier is asked if he has any witnesses to call in his defence, and if so those evidences are collected and they are present on his trial for him to call in to prove anything on his behalf, so that he has every fair play in that respect.

3233. In your experience do you think that a private soldier always has an opportunity afforded to him of making his defence?—Yes, always.

3234. Have you known cases where the court have taken the part of the prisoner?—No, not to my knowledge.

3235. (*Capt. Vivian.*) You know that sometimes the commanding officer thinks that the sentence passed on a soldier is not sufficiently severe, and he reassembles the court for the purpose of revising that sentence, do you think there is any feeling on the part of soldiers that that power of the commanding officer is ever exercised unduly?—I cannot say what the feelings of the men who are tried are, but I believe that such a feeling does actually exist.

3236. You are aware that commanding officers have power to reassemble regimental courts-martial for the purpose of revising their sentences?—Yes.

3237. Sometimes with the object of making the sentence more severe?—Yes.

3238. Do you believe that a feeling prevails in the army that that power of the commanding officer is exercised unfairly?—I do think so.

3239. (*Lt.-Gen. Eyre.*) If a court-martial had the power of reducing a serjeant to the bottom of the list of serjeants, or to the rank of corporal, would that be acceptable to the serjeants?—It would.

3240. Would such a proceeding prevent a serjeant being respected as heretofore by the men, or would it damage his influence?—No; he is still a non-commissioned officer. If he was only a lance-corporal he would be respected as a non-commissioned officer just the same as he would be as a serjeant. His authority would not be the same as a serjeant, but he would still be respected as a non-commissioned officer.

3241. Do you consider that in court-martial cases where there is a doubt of any kind or description in the case, the court-martial has a leaning towards the prisoner or against the prisoner?—That would be rather a strange question to answer. I do not think that they would have anything against the prisoner.

3242. If they felt a doubt how would they lean, in your opinion?—They would give the prisoner the benefit of the doubt.

3243. What would be the view of the serjeants if there was the power of fining them in certain cases, giving them in such cases the power to appeal to a court-martial?—That would be a change for the better.

3244. (*Lt.-Gen. Peel.*) But if the court-martial had the power, as suggested by General Eyre, of reducing a serjeant to a corporal, still the effect of his having been tried by a court-martial would prevent, according to the present regulation, his ever getting good-conduct pay or the medal, would it not?—It would.

3245. What power has a commanding officer now with regard to the punishment of a non-commissioned officer without a court-martial?—One would be that he could remove him down ten steps on the roll of serjeant or to the bottom of the roll of serjeant, and it would be a certain length of time before it came to his turn for promotion again.

3246. Does promotion come by seniority among the serjeants?—Yes; according to seniority, if they are qualified for the next promotion.

3247. Were you senior serjeant when you were made serjeant-major?—I was not; but those on the top of the roll before me were not qualified for the situation.

3248. Then it is by selection, and not by seniority?—Yes. Had the non-commissioned officers first on the roll been qualified they would have got the situation.

3949. But if the commanding officer had the power of inflicting a punishment which would not render it necessary for the man to be tried by court-martial, you would think it an improvement on his being tried by court-martial, which necessarily brings with it a heavier punishment in the form of deprivation of advantages?—I would.

3250. (*Mr. Headlam.*) I think you said that the opinion of the men was generally that they had fair play before courts-martial?—Yes; I can only state what I think myself; I think myself that they have fair play.

3251. Do you ever recollect a case where the opinion of the men was that a man who was innocent had been found guilty?—No, never to my recollection.

3252. (*Marquis of Hartington.*) You mentioned trials for drunkenness; do you think that men have been hardly treated by courts-martial on charges of drunkenness?—Yes, I think they have.

3253. Have they been convicted on rather slight evidence?—Sometimes.

3254. (*Mr. Headlam.*) That is on the point as to whether the man was really drunk or not?—Yes.

3255. When it has been proved that he has been drunk?—Yes, I have seen two non-commissioned officers state to me when a man was late coming in at tattoo that he was drunk; and to convince myself I see the man myself, and my opinion would be quite different from those non-commissioned officers. I have often seen a man get off in that case, unless they have confined the man without my seeing him, or some one else. The general opinion might be that the man was not actually drunk; but if that had been his fourth time he would have been tried by court-martial.

3256. I suppose that the man in the case you mean had been drinking?—He had been drinking, but not to call drunk; he was not incapable of doing anything.

3257. (*Lt.-Gen. Eyre.*) Have you seen any cases in which prisoners were acquitted when the whole of their comrades knew that they were guilty men?—No, I never knew a case.

3258. (*Chairman.*) What, in your opinion, is the punishment which is most effective in maintaining discipline in the army at present; corporal punishment being done away with, what is the punishment which they dread the most?—I suppose it is imprisonment.

3259. With hard labour?—With hard labour.

3260. Do you know anything of the punishments in military prisons?—I have very little acquaintance with the prison regulations. There is one description of punishment they do not like, and that is solitary confinement.

3261. If you were to select a punishment which you think would make the most impression upon a soldier, would you select solitary confinement?—I would.

3262. Rather than the prison hard labour?—Yes.

3263. Have you had any instances where solitary confinement has been carried to any extent within your knowledge; and what is the longest punishment of solitary confinement that you have ever heard of as being inflicted?—Five days and seven days.

3264. By a sentence of a court-martial?—No, by order of the commanding officer.

3265. What is the longest number of days that you have heard of by sentence of a court-martial?—That all depends upon how the sentence is. The punishment by court-martial is not solitary confinement; they may sentence to so many days, I believe, but I am not sure abont that.

3266. (*Capt. Vivian.*) Does solitary confinement carry with it punishment diet?—It does.

3267. Bread and water?—Not bread and water exactly.

3268. (*Chairman.*) For drunkenness could you suggest any punishment, other than that now in vogue in the army, which you think would have an equally corrective effect, such as stopping of pay, for instance?—Yes, that is a punishment which a soldier does not like.

3269. Do you think that it would have a better effect in stopping drunkenness than the punishment to which a soldier is now subject?—I do.

3270. Do you think that amongst non-commissioned officers of your own class that opinion would prevail?—I do.

3271. What, in your opinion, is the punishment which can be inflicted summarily with the greatest effect, on the line of march for instance?—The punishment would be slight that could be inflicted on the line of march.

3272. Have you had much experience of corporal punishment in your regiment?—I have known several cases in India.

3273. As a serjeant-major, have you any fear of being unable to maintain the proper discipline of your regiment now that that punishment is done away with?—No, none whatever.

3274. What punishment would you suggest to be inflicted in these cases for which corporal punishment has been the sentence?—I should think solitary confinement.

3275. Is a soldier put into irons when he is in solitary confinement; is he handcuffed?—No, he is merely confined in the cell alone by himself.

3276. (*Capt. Vivian.*) It is not a dark cell, is it?—I cannot mention how the prison is, in some prisons the cells are dark.

3277. But the solitary confinement you speak of is not what they call the dark cell system?—Yes, the cell would be dark, but it would be ventilated.

3278. (*Chairman.*) In your experience have you found that, wherever your regiment has been quartered, there are the means of inflicting a punishment of that kind?—Yes, there are always the means.

3279. And you think that is generally the case both in England and in India, and in our colonies?—I do.

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3280. Is there no difficulty anywhere in inflicting solitary confinement?—It could always be inflicted.

3281. (*Lt.-Gen Eyre.*) Has there been any serious case of insubordination within the last two or three months in your regiment?—One only.

3282. What means were resorted to on that occasion?—A man was tried by general court-martial at Aldershot and sentenced to two years' imprisonment and dismissed the service.

3283. (*Chairman.*) Does your observation that the soldier has generally fair play in a court-martial, apply as well to regimental, to district, and to general courts-martial?—Yes, I think it does.

The witness withdrew.

Troop Serjeant-Major B.

TROOP SERJEANT-MAJOR B. called in and examined.

3284. (*Chairman.*) The Commission wish me to inform you that your name will not be given, and they hope you will give your evidence here with the greatest independence. No notice whatever will be taken of whatever evidence you give conscientiously as a soldier. You are a troop serjeant-major, I believe?—Yes.

3285. How long have you held that post?—Two years.

3286. How long have you been in your present regiment?—I have served 14 years in this regiment. I have been 19 years in the service altogether.

3287. How long as a private?—Seven years as a private.

3288. And how long as a non-commissioned officer?—Ten years as a serjeant and serjeant-major, and two years as a corporal.

3289. During that time have you always been in England?—No.

3290. Have you been abroad?—I have been in the East Indies for five years, and in the Crimea.

3291. During that time you have had considerable experience, I presume, with regard to courts-martial; that is to say considerable experience as to knowing the feelings of the men with regard to courts-martial?—Yes.

3292. Is it your opinion that amongst the non-commissioned officers and soldiers of the British army there is a feeling that they have fair play when they are tried by a court-martial?—Not among the non-commissioned officers.

3293. In what way do the non-commissioned officers think that they have not play?—Because they have to be tried for that for which a private soldier would get a few days' confinement to barracks.

3294. And you think that the non-commissioned officers feel that they ought to be some punishment for non-commissioned officers without reduction to the ranks?—Yes.

3295. Do you think that that is the general feeling?—I think it is.

3296. In your regiment, for instance, do you think that a serjeant who had been punished by a court-martial or otherwise, as a serjeant would still retain sufficient respect on the part of the men to preserve discipline?—Do you mean a serjeant after he is reduced?

8297. Supposing a non-commissioned officer was tried by court-martial and found guilty and punished as a non-commissioned officer, do you think he would lose that respect which is necessary to a non-commissioned officer to preserve discipline?—No. If he is a respectable man he will try and regain his rank.

3298. But supposing, now, that you were tried by a court-martial without being reduced to the ranks and punished as a non-commissioned officer, without being reduced to the ranks, do you think that you would be able to preserve discipline in your regiment afterwards?—It is according to what punishment I received.

3299. Is it not according to what crime you are convicted of?—If I lost my crown as a serjeant-major, and were reduced to serjeant, then of course I should have the same power almost.

3300. (*Lt.-Gen. Peel.*) It is not a question of power, but it is a question of respect. Would the men look up to you with the same respect after you had lost the crown as they did before?—No, the more you have authority the more you are respected.

3301. (*Chairman.*) Do you think it would impair the efficiency of a non-commissioned officer to be tried by a court-martial if he was reduced to the ranks on his being found guilty?—I think not.

3302. In your opinion it depends very much upon the crime for which the man would be found guilty?—Yes.

3303. If it was a serious crime he would of course lose respect, but if it was a trifling crime you do not think he would?—I do not think so.

3304. (*Lt.-Gen. Peel.*) But, according to the present regulations, the very fact of your having been tried by court-martial would prevent you getting good-conduct pay, would it not?—Yes.

3305. That is what the non-commissioned officers principally object to, is it not?—It is.

3306. (*Capt. Vivian.*) They cannot get the medal under any circumstances?—Yes, if they are tried in the first three years of their service.

3307. But after five years service?—No.

3308. (*Lt.-Gen. Peel.*) Then if a commanding officer had the power of inflicting punishment on a non-commissioned officer without trying him by court-martial, you think that would be preferable to trying non-commissioned officers by court-martial?—Yes.

3309. (*Chairman.*) Do you think that the privates of the army feel confident that they have justice administered properly under the present system of courts-martial?—Yes, I think they have from what I can learn.

3310. Supposing that, unfortunately, you committed a serious crime in your regiment, would you prefer to be tried by a court-martial or by a civil tribunal, if you were a private soldier?—It is according to the crime. I might deserve more punishment than the commanding officer is able to give, and then of course he would have to try me by a court-martial.

3311. Do you think that there is a feeling amongst the soldiers of the British army that when they are brought for trial before a court-martial they have every facility to defend themselves in their trial?—Yes. Some men make a very good defence.

3312. And you think full justice is done to them in their defence?—Yes.

3313. Have you had opportunities in your experience of seeing whether there is any general leaning for or against a prisoner on his trial?—I never have.

3314. Do you think that there is a feeling in the army that the trials for drunkenness are conducted fairly?—Yes, but that is not left to the commanding officer. A man must be tried for the fourth offecer.

3315. As troop serjeant-major in your own regiment, do you believe that the crime of drunkenness could be punished in any other way than at present without injuring the discipline of the army, supposing the necessity of trying a man by court-martial on the fourth time of being drunk was done away with, and some punishment could be inflicted?—Yes. If those men were allowed to remain with the other men they would corrupt the others of course.

3316. Do you think that it is a necessary rule that a man for the fourth time of getting drunk should be tried by court-martial?—Yes; they are best away from the men altogether.

3317. Supposing that the punishment of stoppage of pay were inflicted for drunkenness, do you think that that would have a bad or a good effect?—A very good effect. They would not be able to get the money to spend.

3318. (*Capt. Vivian.*) Do you think that it is a better punishment for drunkenness than putting a man

in prison?—Yes; you would stop his pay after he came out of prison. I should punish him and stop his pay for a certain time of course. A man now when he is tried for drunkenness generally loses a penny a day for 168 days.

3319. (*Chairman.*) What, in your opinion, is the punishment which is most effectual in preserving discipline in the army; what punishment is it that a soldier dreads the most?—I think imprisonment with hard labour.

3320. Do you think that the common imprisonment with hard labour or solitary confinement is the most dreaded?—Hard labour, I should think.

3321. More than solitary confinement?—Yes.

3322. Have you had much experience of soldiers who have gone through solitary confinement?—I have.

3323. Have they expressed their feelings to you upon the punishment at all?—Yes.

3324. And the same with regard to hard labour?—Yes.

3325. And you think that the hard labour is the most dreaded?—Yes.

3326. What is the kind of hard labour which you think is the most dreaded?—Shot drill.

3327. Have you any doubt about that?—I have none.

3328. Do you think that is the general feeling?—I do.

3329. Have you the means of inflicting shot drill wherever you go in your regiment?—Where there is a regimental cell.

3330. Have you ever inflicted shot drill where there has been no regimental cell, as for instance on the line of march or anywhere in outlying quarters?—No.

3331. Was that because it could not be inflicted?—It could not.

3332. At all quarters can you inflict solitary confinement?—Yes; I think in every quarter where I have been there has been a regimental cell, and wherever there is a regimental cell of course there can be shot drill.

3333. (*Viscount Eversley.*) Is the bread and water diet much dreaded by the soldier?—Yes, but the men dread hard labour most I think.

3334. (*Mr. Headlam.*) Have you ever heard of a man being convicted of being drunk who was not drunk?—I never have.

3335. (*Mr. Mowbray.*) Have you had any experience of cases of trials for embezzlement?—No.

3336. You do not know what the feeling in the army is as to whether men are fairly tried for making away with necessaries, or stealing, or embezzling money?—I never knew a case of embezzling money in my regiment.

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3337. (*Lt.-Gen. Eyre.*) If a commanding officer had the power of awarding to a non-commissioned officer some kind of punishment instead of trying him by court-martial, could you suggest any kind of punishment instead of making non-commissioned officers undergo the usual punishment of defaulters?—No.

3338. Would you not regret to see a non-commissioned officer so classed as to undergo punishments of that kind?—Yes.

3339. (*Marquis of Hartington.*) Do you know of cases where soldiers have been sent to prison, and came back and made good soldiers afterwards?—Yes.

3340. Frequently?—Yes, frequently.

3341. You would not like to get rid of a man always after he has been punished for any serious offence?—No.

3342. Do you know men who have suffered corporal punishment and made good soldiers afterwards?—Yes, on service.

3343. But not at home?—No, I do not know of any.

3344. Do you think that it would be a good thing to be able to get rid of bad characters more easily?—Yes; I think it would be a very good thing.

3345. Are there not some men in every regiment with whom you never can do any good?—Yes.

3346. (*Capt. Vivian.*) And they corrupt other men?—Yes, they corrupt other men. Some men are always in prison.

3347. (*Lt.-Gen. Eyre.*) How many men would you put down in that category, of whom you would like to get rid, in your regiment?—There are about six such men in the regiment now, I think.

3348. (*Capt. Vivian.*) They are pretty well known in every regiment, are they not?—Yes; there are very few such bad characters in my regiment.

3349. (*Lt.-Gen. Eyre.*) And that would weed you satisfactorily of them?—Yes, I think so.

3350. (*Chairman.*) Do you think a man is ever tempted to commit crime or to act in a disorderly manner for the sake of being sent to the right about?—No.

3351. And you do not think it would have that effect if more of the bad characters were dismissed from the army?—I do not think it would.

3352. (*Marquis of Hartington.*) Would those bad characters like to be discharged?—I do not think they would. I often meet men as we march about the country who have been discharged, and they say that they are very sorry that they have been discharged.

3353. (*Chairman.*) What is the strength of your regiment?—About 600. I have not the exact strength.

The witness withdrew.

TROOP SERJEANT-MAJOR C. called in and examined.

Troop Serjeant-Major C.

3354. (*Chairman.*) The Commission wish me to inform you that they hope you will give your evidence with the greatest independence and freedom. Your name will not be given, so that you need not dread any consequences from expressing yourself freely and independently. How long have you been in the army?—Thirteen years on the 28th of March last.

3355. Will you state the length of your services as private and non-commissioned officer?—I was private for eight years, and I have been non-commissioned officer five years.

3356. How long have you been serjeant?—I was four years and four months a serjeant-major, and I became serjeant-major the 1st of this present month.

3357. Have you been abroad as well as in England?—I was 10 months in Turkey at the time of the Crimean war in 1856.

3358. Have you been in India?—No.

3359. Nor in the colonies?—No.

3360. Have you known much of courts-martial while you were in the service?—I have known several who have been tried by courts-martial.

3361. Can you inform the Commission whether among those soldiers with whom you have come in contact during the time that you have been in the army there is a feeling that they have fair play in a trial before court-martial?—They consider that they get a fairer trial in a district, or garrison, or general court-martial than they do on a regimental court-martial. That is the general feeling, I think.

3362. What is the objection which you think is entertained to a regimental court-martial?—I have no objection to it myself, but I have heard them say that if a man is put back for a regimental court-martial he is a doomed man. They think that they will not get the benefit of the doubt in a regimental court-martial.

3363. But that they would on a district or a general court-martial?—Yes.

3364. Could you from your own experience say whether you think that that opinion is well founded?—As far as I have seen or known I have nothing to complain of.

3365. You think that justice is done indifferently

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in the regimental courts-martial as well as in the others?—Yes.

3366. In what way do you think that the soldier looks upon a regimental court-martial as dooming him?—They think that the commanding officer is biassed against them, and that he would have more power in a regimental court-martial of punishing them than on a general court-martial.

3367. The feeling of a soldier is that the commanding officer has too much influence in the decision of a regimental court-martial?—Yes.

3368. Have you known in your experience any decisions of regimental courts-martial revised by the commanding officer?—No.

3369. But I suppose that they are revised sometimes, are they not?—They are revised sometimes. If the court recommends the prisoner, after reducing him, to be reinstated, the commanding officer generally acts upon that and reinstates him.

3370. Do you know of any instance where a commanding officer has revised the finding of a court-martial and has directed the court to reconsider its finding?—Yes.

3371. Is there any feeling on the part of the soldiers upon that point?—No. The commanding officer has revised it and pointed out cases where they have given a wrong verdict, and the president of the court might have reduced the man; or perhaps when he has tried him he has only reprimanded him; and I have known cases of the commanding officer pointing out to the president that he must reduce him, that he could not sentence him to be reprimanded.

3372. Do you think that that creates a feeling amongst the soldiers?—Yes.

3373. (*Captain Vivian.*) Are you expressing now the general opinion which you have gathered from the men?—Yes.

3374. That a commanding officer, if he chooses, may lay a regimental court-martial against a soldier with a sentence more severe than just?—Yes.

3375. (*Chairman.*) Do you think that the men are aware that the sending of the finding of a court-martial to be reconsidered by the court does not involve the necessity of the court altering the sentence?—No, I believe that the president of the court can still adhere to his former finding. They are not bound to alter it on account of the commanding officer pointing out to them their mistake.

3376. Then your only objection is as to the influence which the commanding officer is supposed to have upon the court?—Yes.

3377. (*Lt.-Gen. Peel.*) When you talk about reducing and reprimanding you are talking about non-commissioned officers being tried by courts-martial, are you not?—I consider when a man is tried by a regimental court-martial that the colonel can influence the officers upon the court.

3378. Have you had any experience of regimental courts-martial except in your own corps?—No, I only speak the general talk of the men, but I speak of all corps.

3379. (*Chairman.*) Is it your opinion that an alteration might take place with regard to the punishment of non-commissioned officers without reducing them to the ranks?—Yes, I have known cases where a corporal has been able to do his duty exceedingly well and has given satisfaction, and when he has been promoted to the rank of serjeant he has not given such satisfaction as was expected of him, he was not able to do it, and they have, perhaps, got him tried by court-martial to reduce him to the ranks from being a serjeant; whereas if he had reverted to his former rank in which he had given satisfaction, that would give him a better trial to be promoted to the rank of sergeant again, unless it was a severe case.

3380. (*Lt.-Gen. Peel.*) But that is a trial on account of incapacity, and not on account of having committed any crime?—Yes.

3381. Do you think that it would be an advantage that you might put him back to the rank of corporal instead of being obliged to reduce him to the ranks?—Yes.

3382. But that man has committed no crime, and therefore if he went back to the rank of corporal he would still retain the same influence with the men as a corporal which he had before?—Yes, and he would get the chance of getting his promotion as a serjeant, perhaps, after a little more probation.

3383. If he were tried by a court-martial for getting drunk, or anything of the kind, and was reduced to the rank of corporal, he would not have the same influence with the men as he had before, would he?—No.

3384. (*Lt.-Gen. Eyre.*) With reference to your observations about regimental courts-martial, if your commanding officer had exactly the same power in his hands as a regimental court-martial, would you, as a prisoner, prefer to be dealt with by him, or by the regimental court-martial, both having the same power to deal out the punishment?—I might feel aggrieved and I might prefer to be tried by court-martial to being dealt with by the commanding officer, but as far as my experience goes I have been always satisfied with the decision of my commanding officer.

3385. (*Chairman.*) In your corps I believe you have not a great deal of punishment, have you?—Not as much as I have heard of in other corps.

The witness withdrew.

Bombardier D.

BOMBARDIER D. is called in and examined.

3386. (*Chairman.*) The Commission wish me to request you to give your evidence with the utmost independence and to state your opinion upon the questions put you without the least fear of its being noticed hereafter. Your name will not be given, and we do this in the hope that you will speak with the utmost freedom and independence. How long have you been in the artillery?—Eight years.

3387. You are a bombardier, are you not?—I am an acting bombardier.

3388. Have you been quartered in England during the whole of your service?—No, only about two years.

3389. Where have you been besides?—In India.

3390. Have you had any opportunities of forming an opinion as to the feeling which exists among non-commissioned officers and privates with regard to the justice which is administered in courts-martial?—Yes, a good many.

3391. Do you think that the general feeling is that justice is strictly administered in those courts?—Yes, I have never heard any complaints about injustice.

3392. Do you think that a prisoner going before a court-martial has every means afforded him of conducting his defence?—Yes.

3393. Do you state that with regard to general courts-martial, district courts-martial, and regimental courts-martial?—There may be an advantage taken by a commanding officer on a regimental court-martial.

3394. What advantage do you think may be taken in a regimental court-martial which is not taken in the others?—A commanding officer might not like a man, and might take advantage because there was no officer of another corps there; he might take advantage of that.

3395. What power, if he wishes to take advantage, do you think that the commanding officer has of carrying out his views?—They are the officers of the regiment and he may influence them in their opinion, that is all.

3396. You think he might influence the judgment of the officers of the regiment, they being officers of his own regiment?—Yes, but I have always consi-

dered myself, that a regimental court-martial was fair, I have never seen any injustice.

3397. (*Capt. Vivian.*) You are speaking of the impression upon the men's minds generally in the army, are you not?—Yes, I have heard complaints. I have not heard complaints of any injustice being done, but I have heard mention that injustice could be done by a regimental court-martial.

3398. (*Chairman.*) Have you ever heard a man say when he has been tried by court-martial that he has not had the means of conducting his defence?—No.

3399. And you think it is the general feeling that there is ample means of a man's defending himself?—Yes.

3400. (*Marquis of Hartington.*) I suppose you have heard complaints made of the severity of a sentence, have you not?—Yes, of course, that is according to opinion. A man would say, whether he was right or wrong, that he got a severe sentence.

3401. But is it often the opinion among the other men that a sentence has been too severe?—I cannot say that it has.

3402. (*Lt.-Gen. Eyre.*) Have you ever known a man to be found guilty when his comrades knew him positively to be innocent?—No, I cannot remember that I have.

3403. (*Marquis of Hartington.*) A great many of the cases which are tried by regimental courts-martial are cases of drunkenness, are they not?—Yes, a good many.

3404. Do you think that a man has a fair chance if he is tried on a charge of drunkenness?—Yes, according to military law he has a fair chance of obtaining justice.

3405. (*Chairman.*) Do you think that any other punishment could be administered for the crime of drunkenness?—Yes, I consider that a man's pay should be stopped, because if his pay was stopped he could not get drunk, he would have no money to get drunk with.

3406. And inasmuch as when he is drunk he cannot perform his duty to his country?—No; when he is drunk he cannot perform his duty, and his comrades have to perform his duty besides their own, and it is double duty for them.

3407. How do you think such an alteration would be acceptable by privates in the army?—I think it would be very acceptable instead of courts-martial.

3408. Do you think that it would tend to check drunkenness more than the present system does?—Yes; because if a man has not the money he cannot get drunk. A few do, but I do not know how they do it.

3409. (*Capt. Vivian.*) And if a man gets drunk, his comrades have to do his duty while he is in prison?—Yes. If my comrade is put into prison, I must do his duty besides my own.

3410. (*Chairman.*) In your opinion is drunkenness on the increase or on the decrease at the present moment in the British army?—I consider it is on the decrease.

3411. Very much?—Yes; there is not near so much drunkenness; in fact, I consider that the army is getting more enlightened than it was when I joined eight years ago.

3412. And you think that it is to that that the decrease of drunkenness is to be attributed?—I do.

3413. (*Lieut.-Gen. Peel.*) Your experience has been in India, has it not?—Yes.

3414. Is there any difference there as to discipline? It is stricter here.

3415. What, in your opinion, is the punishment which is most efficacious in the army, corporal punishment being done away with?—I think that corporal punishment should be done away with, it degrades a man, and he never thinks anything of himself afterwards. It takes away with his pride in himself.

3416. What punishment do you think is the best substitute for corporal punishment?—I know of no other except imprisonment.

3417. Do you believe that imprisonment, with hard labour or solitary confinement, has the most effect upon the soldier?—Solitary confinement, I should say.

3418. Do you think that they dread that more?—Much more.

3419. In your corps have you always the means of inflicting solitary confinement?—Yes.

3420. Do you imprison a man in irons in a case of solitary confinement?—No, in a cell.

3421. Without irons?—Without irons.

3422. (*Capt. Vivian.*) You put him upon short commons; bread and water?—No; that is if he commits himself in prison, as a prison punishment.

3423. (*Chairman.*) Do you think that the punishment of being put on bread and water would have a good effect if it were carried out more than it is now?—It is according to the man who is being punished.

3424. Do you think that they dread that punishment much?—I cannot say much about their being punished by bread and water. They dread the solitary confinement.

3425. And not the bread and water?—Not so much.

3426. (*Lieut.-Gen. Eyre.*) If you were on a detachment and were responsible for that detachment, and had a bad case of insubordination (perhaps the case of a man knocking down a serjeant), what would you think the most effectual way (you having the power) of dealing with him promptly, as an example to his comrades, and also as a punishment to the man?—There could be nothing done to him, unless he was made a prisoner, until it was investigated by the officers of the regiment. Nothing that I know of could be done with him.

3427. But supposing you yourself had the power of dealing with him summarily, what would you do?—I do not see anything that could be done, except making him a prisoner at once, until the officers investigated his case. A non-commissioned officer would have no power.

3428. But if he were brought before you to be dealt with, what do you think would be the most effectual punishment for gross insubordination with violence?—I should say that he should be severely punished.

3429. But what is the severe punishment which you would inflict?—Imprisonment. I know of nothing else for a crime like that.

3430. (*Marquis of Hartington.*) Do you know any men in your regiment who have been imprisoned?—Yes.

3431. Are they good soldiers now?—Some are. We have had one on whom we had a court-martial about six months ago. He deserted from the regiment, and was away about 18 months, and tried his hand at everything; and when he came back he got imprisonment for 84 days, I think it was, and now he makes a first-rate soldier. He has seen the justice of his punishment.

3432. (*Chairman.*) Do you think that that is frequently the case?—Yes, very often, if a man is away, and sees that he cannot better himself out of the service, as in the case of this man, he is content to come back again, and sees he cannot do anything better.

3433. (*Lt.-Gen. Peel.*) Did he deliver himself up, or was he taken?—Well, he says he was taken; but I suspect he gave himself up, and he could not do better.

3434. (*Chairman.*) Do you think that he did that with his eyes open, knowing that he should have this severe punishment as a deserter?—Yes, he knew that he would be punished severely for being away 18 months.

3435. Is there any difficulty in getting recruits for your service?—We have for gunners. The gunners' standard is 5 feet 8 inches.

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3436. Was this man a gunner?—No, a driver. A driver works harder than a gunner.

3437. But do you think that there is a general desire to get into your corps?—There is.

3438. (*Marquis of Hartington.*) I suppose you know some bad characters, who are always in trouble?—Yes, I know plenty who are always in trouble; but they would always be in trouble wherever they were. It is not through discontent with the service; they would be in trouble if they were civilians.

3439. Do you think that it would be satisfactory to the men in general if they could be got rid of?—Yes, it would be. Men who are always in trouble give their comrades trouble and annoyance in bringing them their meals, and so on; I hear many complaints against men in my subdivision who are always in trouble.

3440. Do you think that if it were the rule to discharge bad characters more frequently than now, men would commit crimes in order to get discharged?—As the service is now, I think that very few men would commit a crime to get discharged.

3441. Would not those bad characters most of them like to be discharged?—I do not see that they would like to be discharged. They cannot keep from being bad characters; they cannot keep from committing themselves; and, as I said before, they would commit themselves wherever they were. They would like the service, but they cannot keep from committing themselves.

The witness withdrew.

Corporal E.

Corporal E., called in and examined.

3442. (*Chairman.*) The Commission wish me to request you to give your answers to any questions which may be put to you with the greatest independence; your name will not be given, and you need not be at all afraid of any consequences from speaking your mind in the freest possible manner. No notice whatever will be taken of what you say, and we hope you will give your evidence before us according to your own feelings, without reference to anything else. How long have you been in the army?—Nine years and seven months.

3443. How long have you served as a non-commissioned officer?—Five months as an effective non-commissioned officer.

3444. Has your service been chiefly in England, or abroad?—I served two years abroad.

3445. Where?—In India, at Madras.

3446. And during the remainder of the time have you served in England?—Yes.

3447. During your service have you had many opportunities of judging of what the feeling of the soldiers and non-commissioned officers of the British army is with regard to the mode in which justice is administered in courts-martial?—Yes, I have.

3448. What do you think is the feeling?—I think in one instance, of drunkenness, it could be done better than by trial by court-martial. I think deducting some of their pay would have more effect.

3449. But you think that the feeling is that justice is strictly administered?—Yes.

3450. And that would apply equally to regimental district and general courts-martial?—Yes.

3451. Do you think that the feeling amongst the soldiers is that a man tried by a court-martial has a fair means of defending himself?—I think so.

3452. Do you think that feeling is general?—Yes.

3453. And you do not hear any complaints against the fairness of the Court, but merely as to the punishment inflicted for crimes?—No.

3454. With regard to drunkenness, what is it that you would wish to suggest as to the punishment?—Instead of trying a non-commissioned officer for drunkenness, for instance, if he got drunk he might, perhaps, be reduced from serjeant to private. If a private gets drunk it is overlooked, and he gets punishment drill, for the first once or twice perhaps; and I think instead of trying that by court-martial, deducting some of their pay would be much better, and it would perhaps tend to decrease drunkenness.

3455. Do you think a non-commissioned officer ought to be punished without reduction to the ranks?—I would make them revert to a lower rank.

3456. But not to the rank of a private soldier?—No.

3457. Do you think that is a general feeling throughout the non-commissioned officers?—I do not think I could answer that question.

3458. What is the peculiar hardship in a non-commissioned officer being reduced to the ranks for the crime of drunkenness, inasmuch as a non-commissioned officer who gets drunk would lose his influence over the men; do you think that a non-commissioned officer who was punished for drunkenness without being reduced to the rank of a private soldier would afterwards maintain his influence over the men?—I think he would not let the drunkenness occur again. I think that he would try and rise again and retain his influence over the men still.

3459. Supposing the punishment for drunkenness was altered in the army, and stoppage of pay was inflicted as a punishment for that offence, do you think that that would be considered fair?—I think it would tend to decrease drunkenness better than courts-martial, because a court-martial throws a man's duty upon his comrades.

3460. What, in your opinion, is the punishment that a soldier dreads the most?—Going to prison, I should think.

3461. With hard labour?—Yes.

3462. And you think he dreads imprisonment with hard labour more than solitary confinement?—I should think so.

3463. Have you had an opportunity of hearing the opinions of men who have gone through the punishment of solitary confinement?—Very often.

3464. And also of those who have gone through hard labour?—Yes.

3465. And it is your opinion from what you collect from them that they dread hard labour more than solitary confinement?—Yes.

3466. Does not that in some degree, however, depend upon the disposition of the man punished?—I do not know. I have often heard them pass remarks about men who have been waiting sentence. They say, "He will not like it in prison, the hard labour in "carrying shot."

3467. Then you think that the shot drill is what they dread most?—I think so.

3468. (*Capt. Vivian.*) Do you think it is a good thing that flogging is done away with in the army?—I think it is a very good thing.

3469. You do not think there is any fear of the discipline of the army being weakened by its being done away with?—Oh, no.

The witness withdrew.

Private F.

Private F. called in and examined.

3470. (*Chairman.*) The Commission wish me to state to you before you answer any questions put to you that they hope you will give your answers with the strictest independence, and that you will state your opinions as freely as possible. Your name will not be given and you will incur no notice whatever as to the opinions which you give before us, so that we hope your answers will be given without any fear whatever. How long have you been in the army?—Ten years.

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3471. Have you always served in England?—Always in England.

3472. Have you had any means of forming an opinion upon what is the feeling of the privates of your regiment or of any other regiment with regard to the mode in which justice is administered in courts-martial?—I fancy the opinion generally entertained is that it is not a very just mode.

3473. How so?—I cannot say that I can give you the reason why they should arrive at that opinion, but such appears to be the opinion.

3474. Did you ever hear any reason assigned for that opinion?—I have heard (though it may be a foolish reason) that if you are put back by the colonel for a regimental court-martial you are sure to be punished.

3475. Have you ever known, in your own experience, a man whom you knew to be innocent found guilty in a regimental court-martial?—I cannot say that I have.

3476. The feeling, however, that you allude to is that the colonel of a regiment has too much influence with the court?—The men are under that impression.

3477. That in a regimental court-martial the colonel biasses the opinion of the court?—Yes.

3478. Do you think that there is the same feeling with regard to a district court-martial?—No.

3479. Nor a general court-martial?—Nor a general court-martial.

3480. Do you think the feeling amongst the privates is that in district courts-martial and general courts-martial strict justice is done?—I do.

3481. (*Marquis of Hartington.*) I suppose a man is not very often tried by a regimental court-martial unless his crime is pretty clear?—No, as a general rule he is not.

3482. (*Chairman.*) As a general rule a man is seldom tried by a regimental court-martial unless he is guilty?—A man may go before the colonel and deny the charge, and then the colonel may send him before a court-martial, and they will prove whether he is guilty or not.

3483. (*Marquis of Hartington.*) A great many regimental courts-martial are in cases of drunkenness, are they not?—The principal part of them are cases of drunkenness and absence.

3484. Do you think that a man is ever found guilty of habitual drunkenness on too slight evidence?—Not of habitual drunkenness, but of drunkenness he may be, perhaps.

3485. Do you think it is cases of that sort that make the dissatisfaction you speak of?—I think so.

3486. (*Lt.-Gen. Peel.*) What would be the effect upon the men of stoppage of pay for drunkenness?—I think it would have a very beneficial effect.

3487. Do you think it would be dreaded more than imprisonment?—I think it would be dreaded more than imprisonment.

3488. (*Mr. Mowbray.*) Have you conversed with many privates on this subject to-day?—No, I was not aware what I was wanted here for.

3489. You give your own opinion, but you do not come to represent other people's opinions?—Not at all.

3490. (*Mr. Headlam.*) Have you ever known a man convicted for being drunk when you thought he was not drunk?—I do not think I have.

3491. Have you never heard a case where a complaint was made either by the prisoner himself or by any other man, that a man had been convicted for being drunk when he was not drunk?—I have heard men state so afterwards with respect to themselves.

3492. But you never heard anybody say that he thought that anybody else had been hardly used?—No.

3493. (*Viscount Eversley.*) Do you think that drunkenness is on the increase in the army, or not?—I can hardly form an opinion. I should say that the number of courts-martial are now, of course, more prominent than they were formerly, in consequence of their trying them on the fourth chalk.

3494. (*Chairman.*) Do you think that amongst the privates it would have a more deterring effect from drunkenness if you were to inflict the punishment of stoppage of pay instead of trying them by court-martial?—I do.

3495. What, in your experience, is the punishment usually inflicted by a court-martial for drunkenness on the fourth occasion as a first punishment?—A stoppage of one penny a day for 28 days, or 42 days imprisonment and a stoppage of pay for 168 days.

3496. (*Lt.-Gen. Eyre.*) Do you think it is a good thing for the army that flogging has been done away with?—I think it is. There are some cases though, I think, in which it should not be done away with, such as theft.

3497. (*Chairman.*) You would recommend that it should be kept up for theft?—Yes.

3498. (*Lt.-Gen. Peel.*) Theft among the soldiers?—Yes, theft among the soldiers.

3499. (*Mr. Headlam.*) Is that the general opinion amongst the soldiers?—I believe it is the general opinion.

3500. (*Capt. Vivian.*) Do you not think it would be a good thing to get rid of a thief?—It would be a very good job to get rid of him.

3501. I suppose what his comrades would like would be to get him kicked out of the regiment as soon as possible?—Certainly.

3502. (*Chairman.*) Is there any strong feeling of honour on the part of a soldier not to rob his comrades?—Yes, I think so.

3503. What would be the treatment amongst the soldiers themselves of a man whom they found robbing?—If they were not afraid of the consequences they would flog him themselves.

3504. (*Capt. Vivian.*) Therefore you think flogging need not be maintained for the purpose of keeping up military discipline, but only in the case of such a disgraceful crime as robbing a comrade?—I do.

3505. But do you not think it necessary in order to keep up military discipline, that a man should be flogged?—I think not. I think that discipline can be carried on without it.

The witness withdrew.

The Provost Serjeant.

The Provost Serjeant called in and examined.

3506. (*Chairman.*) What rank do you hold?—I am acting serjeant-major of police.

3507. (*Lt.-Gen. Eyre.*) Are you provost marshal?—No, he is my senior.

3508. (*Chairman.*) Will you give the Commission your opinion as to the nature of the punishments which are most dreaded by the soldiers?—Imprisonment and solitary confinement.

3509. Which should you say was the more dreaded, solitary confinement, or imprisonment with hard labour?—Solitary confinement generally.

3510. What is the proportion of hard labour inflicted under your observation which the soldier dreads the most?—They do not undergo that punishment under the military police here.

3511. You have no knowledge of what goes on in the prison?—No.

3512. In your opinion is the crime of drunkenness increasing or on the decrease?—Increasing, I think.

3513. In Aldershot?—Rather.

3514. Have you filled your present post at any other place than Aldershot?—No.

3515. To what do you attribute the increase?—I attribute it to the extra pay. There has been a slight increase since the extra pay.

3516. Are you speaking from certain information on that point?—I am speaking from what I have seen.

3517. Have you any detailed returns which you could give the Commission, of punishments for drunk-

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enness?—The provost marshal has a diary which could be produced.

3518. What is your especial duty?—I go on patrol in the camp and in the vicinity; and I confine all soldiers for any irregularities committed, such as drunkenness, disorderly conduct, absence without leave, and desertion.

3519. Does the performance of your duty throw you much in the way of the privates?—Yes.

3520. Have you opportunities of judging of their feelings?—Yes.

3521. Have you opportunities of knowing what the feelings of the privates are with regard to justice as administered by courts-martial?—That they get a fair trial.

3522. Do you think that the general feeling is that when a man is put upon his trial he has fair means of defending himself?—I do.

3523. And that the sentences awarded are on the whole given with fairness?—Yes.

3524. You think that that is the general feeling?—I do.

3525. (*Marquis of Hartington.*) What kind of offence is that for which you generally confine men? What is the most common offence?—Drunkenness and absence chiefly.

3596. Do they generally go together?—No.

3527. Are there a great many cases of absence when the men are not drunk?—Yes, there are.

The witness withdrew.

Private G.

PRIVATE G. called in and examined.

3528. (*Chairman.*) We do not ask your name and your name will not be given. We wish you to give answers to any questions put to you with entire independence and without fear of any consequences which may occur to you. We want your own individual opinion upon the points which we shall put to you. How long have you been in the army?—I enlisted on the 17th of February 1860, about eight years and four months ago.

3529. Has your service been in this country or abroad?—In New Zealand and in this country.

3530. How long in this country?—Since the 10th of August 1866.

3531. Have you had an opportunity during your service of judging of the feeling of the privates of the British army with regard to justice as it is administered in courts-martial?—I have been tried on two occasions myself and I never had any fault to find with them.

3532. What was the crime for which you were tried?—The first time was for disobedience to orders. I was a non-commissioned officer then and I was reduced to the ranks. The next time was when the regiment was under orders for England, and as I happened to be at Melbourne I did not wish to come back to England and I deserted.

3533. Were you tried by courts-martial on both those occasions?—By district courts-martial on both occasions.

3534. Did you feel on those occasions when you were before the court that you had the power of defending yourself?—Not except under extenuating circumstances.

3535. Did you feel that you had the power of urging in your defence everything which was material?—I made a defence; I handed it in and I believe it was accepted by the court. It was read by the president of the court; that was the first occasion.

3536. Had you any complaint to make afterwards of the court not having administered justice fairly to you?—Not the slightest.

3537. Of how many officers did the court consist?—I cannot recollect correctly now; about six or seven, I should think.

3538. Was the president a field officer?—A field officer was president of the court.

3539. Did you plead guilty?—I did not; I pleaded not guilty.

3540. (*Lt.-Gen. Peel.*) What was the nature of your disobedience of orders?—It was a colour serjeant that directed me to take down stores which the company required, and I happened not to do it at the moment.

3541. It was a case on which a doubt might arise as to whether you had been guilty of disobedience of orders, or not?—Yes.

3542. (*Chairman.*) And you thought that you were not guilty?—I could not say that I did it. Of course as I did not do it I was guilty.

3543. (*Viscount Eversley.*) But you had perfectly fair play, had you?—I had fair play.

3544. (*Chairman.*) Where were you tried for desertion?—In New Zealand.

3545. Did you plead guilty upon that occasion?—I did not plead guilty on that occasion because there was a discrepancy in the date. I happened to desert on the 8th of November, and they charged me upon the 9th.

3546. Did you get off upon that plea?—No, the date of my desertion was previous to what was in the charge. I think that was the reason that it was no use.

3547. You say that you believed that you had fair justice done to you in those courts, do you believe that that is the feeling generally amongst soldiers with whom you have been in the habit of living?—I cannot say positively. I had no objection whatever to make. I was guilty of both charges, and I was found guilty.

3548. (*Marquis of Hartington.*) Is a regimental court-martial generally supposed to be a fair court?—I cannot say. I never have been tried by a regimental court-martial.

3549. But you have heard it talked about by the soldiers, I suppose?—Well, men may have different opinions. I cannot say.

3550. (*Lt.-Gen. Eyre.*) Have you ever seen a man found guilty whom you knew to be innocent?—I never have.

3551. (*Mr. Headlam.*) Not of drunkenness?—No. I have seen men acquitted by courts-martial, but whether they were guilty or not I had no personal knowledge.

3552. (*Chairman.*) What punishment do you think that the privates of the British army consider the most severe?—I could not say. The only punishment I had myself was imprisonment for desertion.

3553. How long imprisonment had you?—Fifty-six days.

3554. With hard labour?—Yes.

3555. What was the nature of the labour?—The nature of the labour was shot drill so many hours a day, and working through the camp.

3556. Which of those did you dislike the most?—The shot drill the most.

3557. Do you think that that is the general feeling?—I think it is.

3558. With regard to punishments for drunkenness do you think that the punishment of stoppage of pay instead of being tried by a court-martial for the fourth offence would have the effect of checking drunkenness more than the present punishment?—I think it would. I am almost certain that the stoppage of pay would stop it more than pack drill or anything of that sort, or even being tried on a fourth occasion.

3559. (*Lt.-Gen. Eyre.*) And it would save you from doing the drunken man's duty?—Certainly.

3560. (*Chairman.*) Do you think that it would be popular in the army among the good soldiers if a drunkard were punished by stoppage of pay?—I think so, because if a man happens to get drunk he is confined to barracks very likely, and not allowed to

go out, and he saves the pay coming round during that time, and when he is at liberty to come out of barracks again he has this pay to spend, and very likely he will get drunk again.

3561. (*Marquis of Hartington.*) Would you like the colonel to have the power to stop a man's pay for drunkenness?—I do not know. I have never seen any injustice on the part of a commanding officer yet.

3562. Would the soldiers like that the colonels should have that power, and that they should have an appeal to a court-martial?—I could not say. Men would be of different opinions. Some might consider that the colonel might act unjustly, and others might be of a different opinion.

3563. (*Capt. Vivian.*) Supposing a drunkard had his pay stopped by his colonel, and he thought that it was unjust on the part of the colonel, and he had power to appeal to a court-martial, then he could not complain of the injustice of the colonel, could he?—He would be afraid to make anything in the nature of an appeal to a court-martial, because if he happened not to prevail, as is likely, he would be charged for making a false charge against the commanding officer, or something of that kind.

3564. His commanding officer would remember it against him?—I do not think that a man would choose to make an appeal if he considered himself unjustly acted upon. I think he would sooner bear any little thing which he might consider injustice than make an appeal.

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3565. (*Lt.-Gen. Peel.*) You were tried for having deserted on the 9th; whereas you deserted on the 8th?—Yes.

3566. Supposing that you had been tried for having deserted on the 8th and you had not deserted until the 9th, do you think that you would have got the advantage of that?—I think I should.

3567. Were you therefore perfectly satisfied with the justice of the court?—Perfectly satisfied. Having deserted on the 8th I was a deserter on the 9th.

3568. (*Chairman.*) What do you believe to be the general feeling of the good soldiers with regard to corporal punishment?—Well, I cannot say. I hear men expressing different opinions upon it. For instance, I often hear the men say that in case a man committed certain crimes he deserved it.

3569. (*Capt. Vivian.*) For what crimes?—For instance, if a private soldier stole property belonging to another; some of them do.

3570. (*Mr. Headlam.*) Any other crime?—Yes, assaults of indecency, or anything like that.

3571. Have you heard that opinion expressed?—I have often heard the men talking about it, and saying that in such cases he does deserve it.

3572. (*Chairman.*) With reference to maintaining discipline, do you think that corporal punishment is necessary?—I do not think with regard to discipline that it has ever deterred any one from the commission of any crime. I do not think they ever think of the consequence when they commit any crime.

The witness withdrew.

PRIVATE H. called in and examined.

Private H.

3573. (*Chairman.*) The Commission desire me to tell you that they hope that you will answer any questions which may be put to you without any fear of consequences to yourself. Your name will not be asked and will not be given up, nor the regiment to which you belong. How long have you been in the army?—Since November 10th, 1863, four and a half years.

3574. Has your service been in England the whole time?—No.

3575. Where?—In New Zealand.

3576. Have you had any opportunities of judging what the feeling of the private soldier is with regard to the justice administered in courts-martial, do you believe that the soldiers think they have a fair trial when they are brought before a court-martial?—I think they do.

3577. You have never had the misfortune to be tried by a court-martial?—No.

3578. Do you think that that feeling is the same with regard to regimental courts-martial as well as to district courts-martial and general courts-martial?—Yes.

3579. (*Capt. Vivian.*) Is there any opinion among any comrades of yours that a commanding officer has a power sometimes over a regimental court-martial which he may work against the men, have you heard such an opinion expressed by others?—No.

3580. (*Mr. Headlam.*) Have you ever heard a complaint about commanding officers having too much power?—No.

3581. (*Chairman.*) Your belief is that when a man is to be tried by regimental court-martial he gets full justice on his trial?—Yes.

3582. (*Capt. Vivian.*) Have you ever heard men say that he is a doomed man if he goes before a regimental court-martial?—No.

3583. (*Mr. Mowbray.*) Have you ever known men get off who have been tried by regimental courts-martial?—Yes.

3584. Have you ever known a man unjustly convicted in your opinion by regimental court-martial?—No.

3585. (*Mr. Headlam.*) Have you ever known a man tried for drunkenness when he was not drunk?—No.

3586. (*Chairman.*) Do you think that the punishment for drunkenness might be altered with advantage, do you think that the stoppage of pay might be inflicted for drunkenness with good effect?—Yes.

3587. You think that it would deter the crime of drunkenness?—Yes.

3588. More than the present mode of punishment?—Yes.

3589. What punishment do you think that the soldier dreads the most of any?—I think prison.

3590. With hard labour or solitary confinement?—Solitary confinement is the worst.

3591. Do you think that is the portion of the punishment which he dreads the most?—Yes.

3592. What sort of hard labour do you think he dreads the most, shot drill or the other hard work?—I think shot drill.

3593. In your experience have soldiers who have gone through the punishment of imprisonment with hard labour afterwards turned out good soldiers?—Yes.

3594. You think that it does not necessarily take away from a man's character as a good soldier to have been subjected occasionally to the punishment of imprisonment?—I do not.

3595. What crime do you think in the army is looked down upon with the greatest abhorrence by the soldier?—Pilfering.

3596. (*Mr. Headlam.*) Do you ever hear any men talking about corporal punishment being done away with?—Yes.

3597. What do they say about it?—They say that it is very good that it is done away with.

3598. And you think that it is a very good thing?—Yes.

3599. Do you make any exception with respect to any crime?—No.

3600. The general opinion was that it was a good thing that it was done away with?—Yes.

3601. (*Lt.-Gen. Eyre.*) Would you like to flog men if they steal?—Yes, I think it would be just to flog them.

3602. (*Capt. Vivian.*) I suppose you would sooner kick a thief out of a regiment?—Yes.

3603. Men do not like to associate with thieves?—No.

The witness withdrew

Adjourned to Thursday next at 1 o'clock.

Room E. House of Lords.

Thursday, 21st May 1868.

PRESENT:

COLONEL THE RIGHT HON. J. WILSON PATTEN, IN THE CHAIR.

VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER.
CAPTAIN THE HON. J. C. W. VIVIAN.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

Lt.-Col. W. Agg.

21 May 1868.

LIEUT.-COLONEL WILLIAM AGG called in and examined.

3604. (*Chairman.*) I believe you are at present in command of the 51st Regiment?—I am.

3605. How long have you held that command?—Upwards of four years.

3606. Have you served in any other regiment but the 51st?—Never.

3607. How long have you been in the regiment altogether?—Between 17 and 18 years.

3608. Will you state to the Commission what has been the practice in your regiment with regard to the instruction of officers in military law?—The practice has been that young officers invariably attend courts-martial as supernumeraries for about six months.

3609. That is according to the regulation, is it not?—Yes. Two years used to be the time laid down. They are not supposed to be members of district courts-martial for a longer period, but on regimental courts-martial we generally put them after six months, and they are supposed by that time to have worked up the Mutiny Act and the Articles of War, and to be perfectly capable of acting as members of a court-martial; but I think the system generally defective. I do not think that officers are so well up in military law as they should be.

3610. According to your experience in the army is it a general practice to pass subaltern officers through an examination in military law?—They have to pass for their lieutenancies examinations in military law.

3611. Before a board?—Before a board of field officers.

3612. Of whom does that board consist?—Of three field officers.

3613. Are they chosen indiscriminately from the army?—They are chosen from the brigade, but officers of their own regiment are not put on except in some cases when they cannot get others.

3614. Does an officer go through that examination on promotion to the rank of captain, as well as from ensign to lieutenant?—He does.

3615. Is it stricter in one case than in the other?—It is stricter for his promotion to captain.

3616. What is the nature of the examination?—On the Mutiny Act and Articles of War and powers of courts-martial, &c.

3617. And the customs of the army?—Yes, and the customs of the army.

3618. You have said that you think that the system i sdefective. In what respect do you think that it is defective?—I do not think that officers have an opportunity of working up military law so well as they should. In fact I know no officer is so well acquainted with military law as he should be. He can go by the Mutiny Act and the Articles of War, and they are clear and concise so far, but I do not think officers' general knowledge of military law is so good as it should be.

3619. But the Mutiny Act and the Articles of War and the Queen's Regulations taken altogether are involved in a little obscurity at the present time, are they not?—I think they are, rather.

3620. Do you think that it is advisable that as a first step the Articles of War and the Queen's Regulations should be simplified?—I do not think that altogether. I think they are simple, but at the same time as to the laws of evidence and other points I do not think officers on courts-martial can get a correct and precise opinion enough, from their not understanding the law of evidence principally. I think that is the defective part of it.

3621. What amendment of the system would you suggest? Would you suggest that there should be a public examiner?—There are books published, we know, on the law of evidence, but they are too elaborate to study, unless an officer went in regularly to study the law, and officers among their various duties have not time to do that; but I think there ought to be some book published on the whole system of courts-martial.

3622. What is the book by which courts-martial are chiefly guided at the present moment?—The Mutiny Act and the Articles of War.

3623. What are the books which are chiefly referred to?—Simmons is the great book.

3624. (*Capt. Vivian.*) But that is not an official authority, is it?—No, it is not considered an official authority. There was a work, by Pipon which was referred to, but then that was found to be not correct in many points and was disregarded.

3625. "Simmons on Courts-martial" is accepted by some courts, and by other courts it is rejected, is it not?—Yes, we accept it for want of a better, On many points we cannot obtain the information required from the Articles of War and the Queen's Regulations, and we have at times to refer to other works, and we refer to Simmons.

3626. But it is no authority, is it?—It is the work to which I always refer.

3627. (*Lt.-Gen. Peel.*) Do you consider that you have no responsibility as commanding a regiment for the fitness of an officer before he is appointed to sit on a court-martial?—Yes, and I should most certainly not appoint a man whom I considered not fit to sit on one.

3628. Do you examine an officer yourself before he is allowed to sit on a court-martial?—He is examined by the adjutant. My subalterns are always examined once a week by the adjutant, and if he reports to me that any officer is not fit I should not appoint him to sit.

3629. Therefore there is that security that before a young officer is allowed to sit on a court-martial he is examined in military law?—Undoubtedly.

3630. (*Lt.-Gen. Eyre.*) As an experienced commanding officer of a regiment with a view to taking a further step in the direction of having officers well instructed in a duty which I daresay you will agree with me is, if not of the very highest importance, one of the most important on which officers could be employed, would you approve of all officers before they undertake that duty being examined by a board specially named for that particular branch of their duty, there being upon that board, in addition to the other field officers, a Deputy Judge Advocate?—Most certainly.

3631. (*Lt.-Gen. Peel.*) It would necessarily tend to an officer's making himself better acquainted with the subject if the examination were to take place, would it not?—Yes.

3632. (*Chairman.*) According to your experience are these sentences of regimental courts-martial often revised?—I very seldom revise them, unless of course from my greater knowledge of the men; if I think the sentence is extreme I remit part of it, but I generally abide by the sentence awarded by the court,

3633. Have you ever revised a court-martial with a view to the increase of the punishment?—I have done so, but very seldom; I was talking with regard to the sentences.

3634. Have you ever revised the finding of a court-martial?—I have done so, but not for some time; not within the last two or three years, I think.

3635. Do you think that it is advisable to maintain the practice which now exists of revising the sentence of a court-martial with a view to the punishment being increased?—I do not, because in the majority of cases I think the court would abide by their former decision.

3636. But does it not sometimes happen that they do not?—It might happen that they may have overlooked a very vital point in the case and may have made a mistake.

3637. Do you think it is advisable to retain that power with a view to correcting those mistakes?—Perhaps it is, but my opinion is not strong upon that point.

3638. In your experience I think you say it is a very rare occurrence?—It is a very rare occurrence.

3639. And you, yourself, have seldom done it?—Very seldom indeed.

3640. Do you think that it would tend to the better discipline of a regiment if, in place of the frequent regimental courts-martial which now take place, greater power was given to the commanding officer, giving always the power of appeal to the prisoner?—I do think so. I think that the commanding officer ought to have much greater power.

3641. From your knowledge of the private soldier do you think that it would create any dissatisfaction if greater power were given to the commanding officer?—I do not think that it would at all. A court-martial ruins many a good soldier. When he is once tried he often gets disgusted with the service.

3642. I believe that now the only appeal which a private soldier has from a commanding officer to a court-martial, is in the case of stoppage of pay?—That is the case.

3643. Can he now claim a court-martial in any case?—Only when his pay is affected.

3644. (*Capt. Vivian.*) Do the men often appeal?—Very seldom. I have only had one case.

3645. (*Chairman.*) Have they the right of appeal now?—Only where it affects their pay.

3646. Should you see any objection to giving them a right of appeal in other cases besides those of the stoppage of pay?—I should be against giving that.

3647. If the power of the commanding officer was increased in all matters relating to discipline, should you see any objection to giving to private soldiers a right of appeal to courts martial?—I would not give it him.

3648. (*Capt. Vivian.*) What is the present power of a commanding officer of punishing non-commissioned officers?—He has no power beyond giving them extra guards or on picquet, or extra orderly duties for irregularities.

3649. He cannot reduce a non-commissioned officer from one rank to another?—The only grades are lance corporal or lance serjeant, and they are not recognized as ranks.

3650. A commanding officer has at present no power over non-commissioned officers, except to try them by courts-martial, has he?—No.

3651. What is the power of a commanding officer with regard to the private?—He can stop his pay for any number of days not exceeding five; he can imprison him for any period not exceeding 168 hours with or without hard labour or solitary confinement, or he can confine him to barracks for any period not exceeding 28 days. The solitary confinement is very seldom given.

3652. Are the powers of commanding officers equal in all regiments?—They are equal.

4653. In the exercise of them I suppose they vary very much?—I fancy that they vary very much.

3654. Different crimes are punished by very different punishments in different regiments?—

3655. To what extent do you think that the power of the commanding officer should be increased?—I am of opinion that the commanding officer should have power to stop a man's pay for a month; I should let him have $8\frac{1}{2}d.$ for his rations and nothing else, and give the commanding officer the privilege of stopping 15*s.* in the month; I would not exceed that. Then the man would have his food and nothing more.

3656. What power have you now of confinement in cells?—168 hours, that is a week.

3657. To what extent do you think that it would be advisable to increase that power of the commanding officer?—I should certainly double it, or I should even say to one month's imprisonment.

3658. Civil magistrates have now the power of giving 28 days cells, I think?—I think to a month a commanding officer should have the power.

3659. You would extend the power of the commanding officer to a month?—I would.

3660. If the power of the commanding officer were extended in the way which you suggest, do you think that the discipline of the regiment might be maintained without any regimental courts-martial at all?—I do. I think that would be a very good plan.

3661. (*Lt.-Gen. Peel.*) If the power of commanding officers were extended to giving the same punishments as are now awarded by regimental courts-martial, the power of appeal to a court-martial being given to the man, should you approve of that plan?—I would not give any appeal; I would allow him to give 28 days, and at the general inspection, if the commanding officer has done anything wrong, the colonel is answerable for it.

3662. (*Chairman.*) Do you not think that that would cause some dissatisfaction in the army?—I do not think it would.

3663. (*Lt.-Gen. Peel.*) For instance; supposing a man disputed his having been drunk and wished for an inquiry as to the fact before a court-martial, would you not give him a power of appeal from the decision of the commanding officer?—No; I think the best system to adopt would be, that when the man's case was brought up the adjutant should take a short summary of the evidence, and have it filed and kept for a year; and if there was any doubt about the case, the man would have his appeal to the General at the inspection, and the General would look into the evidence, and would judge for himself whether it was sufficient, or not, to convict the man upon.

3664. At all events, you would give the man the power of adducing evidence before the commanding officer?—Certainly, I would give him the power of calling what defence he has.

3665. (*Lt.-Gen. Scarlett.*) You said, did you not, that you would give him no appeal?—I said I would give him no appeal. A commanding officer might fine a man for irregularities, for small cases of drunkenness, or absence, 5*s.* or 10*s.*; but I think that stopping days' pay causes great trouble in the accounts, and that it would be better, therefore, to fine men by stated sums, and that, if a man was fined over 5*s.* for anything, then he might have a right of appeal.

3666. But not unless it affected his pay?—Not unless the fine exceeded 5*s.*

3667. (*Capt. Vivian.*) If the power of the commanding officer was increased to the extent which you propose, would you desire that there should be any regulations as to the way in which prisoners should be brought up in the orderly room, that is to say, that the captain of his company, the adjutant, and the serjeants, should be present while his case was being gone into?—I think that is the case now. When a man is brought up now, I always have the captain of his company, unless he is away on duty, or has leave to be absent, and then the subaltern is there.

3668. What records of those proceedings are kept?—No records whatever, except the guard report, but not the evidence.

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3669. But would you propose, supposing the commanding officer's power was extended, as you suggest that any record should be kept of the evidence produced by the prisoner?—Certainly.

3670. (*Lt.-Gen. Scarlett.*) Would you take that evidence upon oath?—That is a point which would require consideration. I consider that anything over the present power of commanding officers, which is seven days, ought to be taken on oath.

3671. In fact you would put a commanding officer in the same position as a magistrate with sworn evidence before him?—Yes.

3672. (*Lt.-Gen. Eyre.*) In case the power of commanding officers were increased in the manner which you have been suggesting, would you, in proportion, give greater power to the captains of companies?—Yes, I think that the captains of companies ought to have power equal to seven days confinement to barracks; and, with regard to my former evidence on the last point, I think that in any case in which probably a prisoner would be imprisoned, the evidence should be taken upon oath.

3673. (*Chairman.*) You think that all evidence should be taken on oath?—All evidence, if a man was going to be imprisoned, should be taken on oath.

3674. To whom would you give power to administer that oath?—I would administer the oath myself, or the adjutant might do it. It would be best to give that power to the commanding officer, to allow him only to be able to administer the oath.

3675. (*Lt.-Gen. Scarlett.*) Do you happen to know the power of a commanding officer in the French service?—I do not.

3676. (*Lt.-Gen. Eyre.*) Supposing that no alteration should be made in regard to regimental courts-martial (that is to say, as to dispensing with them,) and that no more power was given to commanding officers than they have now, would you suggest any improvement in the present constitution of regimental courts-martial?—No, I am against regimental courts-martial entirely.

3677. But I am supposing that it was not considered desirable to abolish regimental courts-martial and that they were continued; in that case would you alter their present constitution, would you have upon them more experienced officers than now, or anything of that kind?—Yes, I think a field officer and a captain, and a subaltern only, would be quite sufficient.

3678. Would that, in your opinion, in a manner obviate the objections which exist now?—It would.

3679. (*Lt.-Gen. Scarlett.*) What are your objections to regimental courts-martial?—I think very often when a man is sent up for trial members know their power, they give 42 days and 28 days. If a man is known to be a bad character he gets 42 days, and if not, he gets 28 days as a matter of course. I have said already that I do not think that they are so well up in military law as they should be.

3680. Have you any reason to complain of your officers at any time in carrying out your wishes?—No, I have had nothing to find fault with in them; I never submit a case to a court-martial unless I think it is quite clear.

3681. (*Capt. Vivian.*) You are compelled to try a man now for drunkenness after the fourth time, are you not?—We are having the option of referring the matter to the General, and he may allow me to deal with the case if I could say anything in the man's favour as being a good man in other respects.

3682. Supposing that a man is tried and convicted of drunkenness and sentenced to a certain punishment, and that when he comes out of prison again he gets drunk again, are you compelled to try him again, or does he begin a new score?—He must be tried again on being drunk twice, if it is within six months.

3683. Then when he comes out again do you try him again for the first offence?—If he is dunrk twice again within the next six months he is tried again.

3684. (*Lt.-Gen. Peel.*) And the fourth time of getting drunk you are obliged to try the man by court-martial?—We are.

3685. What sentence does he receive for the fourth time?—If the matter is referred to the General and the General permits me to deal with it myself, then the man is not tried by courts-martial, and I generally give the man the most severe punishment I can.

3686. What punishment does he receive the fourth time by a regimental court-martial for habitual drunkenness?—He is liable to 42 days imprisonment and 168 days forfeiture of pay.

3687. If when he comes out after that, he gets drunk the fifth time, what then?—That is the first time after having been tried. Then I can give him any punishment I like.

3688. But you can give a much less punishment for the fifth time than he is obliged to receive by the court-martial the fourth time?—Yes, he had his punishment by court-martial for habitual drunkenness and that is all wiped off and then the man starts again.

3689. Although he has been convicted of being an habitual drunkard he is not considered to be an habitual drunkard after he has received the punishment?—No. You may say that he has a fresh start in life after having been tried.

3690. But that fresh start in life does not give him four chances, but only gives him two chances?—It only gives him two chances until the expiration of 168 days.

3691. (*Lt.-Gen. Eyre.*) Some witnesses have objected to the present system of regimental courts-martial on these grounds; that the officers know very well that the colonel will be annoyed if he considers that they have not supported him by convicting a man. In order to remove that from the minds of officers how would commanding officers accept the alternative of waiving the power of confirmation and letting the court-martial go for confirmation to the commanding officer of the district?—I think it would be advisable to do so, if the commanding officer considered that the case was not clearly enough proved by the witnesses, or that there was any irregularity in the proceedings. In fact in one or two cases I have submitted a court-martial to the Assistant Adjutant-General to lay it before the General for his opinion.

3692. The adjutant is now invariably a subaltern, is he not?—Invariably so.

3693. He may be a very young and inexperienced subaltern, may he not?—Yes.

3694. In depôt battalions the adjutants are captains, are they not?—Yes.

3695. With a view to having some judicial assistanee, even on regimental courts-martial, how would you view such an arrangement as this, viz., to have a captain as adjutant, as in the case of depôt battalions, and to require him to qualify himself in the same way as a Deputy Judge Advocate is required to qualify himself as a branch of the staff for the purpose of assisting at courts-martial and performing those duties as well as the general duties of an adjutant, so that the adjutant should be a better informed man on military points than anyone, he being the man who very often acts for the commanding officer, but being at present from his youth and inexperience of really no use to the commanding officer in court-martial cases?—I think that if he were well up in points of military law it would be of advantage.

3696. If he were made to qualify up to a certain mark in military law, would it be approved of by the commanding officer and considered an assistance to him?—I think so.

3697. (*Chairman.*) You have had experience, of course, on general and district courts-martial?—I have.

3698. Have you any suggestions to offer to the Commission with regard to the constitution of the court in either of those classes?—I think that, as to the number on district courts-martial, it might be reduced to four members, and they might be captains, men who had seen some service, with a field officer for president.

3699. In regard to general courts-martial, would you make any further limit as to members ?—I would.

3700. What limit would you place upon the number on a general court-martial ?—I should say that eight members would be quite sufficient, *i.e.*, according to last Mutiny Act.

3701. (*Capt. Vivian.*) There are nine now, are there not ?—Yes, including the President, the numbers are reduced. I was on a court-martial in Simla two years ago, and we had 12 members there.

3702. (*Chairman.*) Did you find inconvenience to arise from the number of members of the court ?—I cannot say that I found inconvenience; but I think the opinion of eight members is quite as good as the opinion of 12 on a matter of that sort. I think that colonels of regiments ought to be on general courts-martial, because it is only the very worst cases which are brought before them.

3703. (*Capt. Vivian.*) Do you see any reason why the sentences of military courts-martial should not be promulgated at once, as is the custom in naval courts-martial ?—I think that all sentences ought to be promulgated at once.

3704. (*Lt.-Gen. Peel.*) Do you think that any alteration might be made in the method of taking the opinion of the court instead of beginning at the junior and going upwards ?—I think that in courts-martial it is best for every man to send in his own opinion upon a piece of paper.

3705. (*Chairman.*) Would you apply that, both as to the guilt or innocence, and as to the sentence ?—In the case of the sentence if it was an intricate case perhaps it would require a little talking over. I was speaking merely as to the finding, and not as regards the sentence.

3706. You think that that should be done on consultation amongst the officers ?—Yes, because many points in the evidence have to be considered upon the sentence, and some men might look over small points which they might be required to go into if they gave their sentence at first; and the president afterwards, if he thought it wrong, might point out whether he thought it too lenient or too heavy.

3707. In your experience of district courts-martial is it usual for the president to sum up the evidence before the court come to their finding ?—Not generally. Of course most courts-martial are generally very clear and concise, so that officers can understand it at once; but if it is an intricate case I generally point out the leading points.

3708. (*Capt. Vivian.*) You have said that you think that the officers of the army are not generally sufficiently instructed in military law. It has been suggested by one witness, if not more, who has appeared before this Commission, that it would be advisable to have a legal assessor to attend general and district courts-martial to advise a court as to their proceedings so far as the law is concerned; do you think that would be advisable ?—I do.

3709. Do you think that it would be unpopular in the army ?—Decidedly not.

3710. (*Chairman.*) Have you had any experience in courts of inquiry ?—I cannot say that I have had very much, they are very rarely had recourse to.

3711. Could you speak to the general feeling of officers with regard to courts of inquiry ?—If a commanding officer wishes to have a matter inquired into they are very useful, and they are perfectly harmless, and the commanding officer has the opportunity of finding out the opinion of the senior officers on a point which he might be at a loss perhaps to see through clearly himself.

3712. Have you ever heard any complaints that in consequence of what has taken place at a court of inquiry an officer has lost his commission ?—I had a quartermaster in my own regiment some years ago on whom there was a long court of inquiry, and he was afterwards tried by court-martial, and the evidence which was adduced on the court of inquiry was the cause of his being convicted.

3713. But have you ever known of a case of an officer losing his commission owing to the report of a court of inquiry without being tried by court-martial ?—No, I cannot say that I know of any case of that sort. Nothing of the kind has occurred within my knowledge. I am not speaking of hearsay, but nothing of the kind has occurred at the stations where I have been serving.

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3714. (*Capt. Vivian.*) Do you see any objection to the questions from the prosecutor or from the prisoner before a court-martial being delivered *vivâ voce* instead of in writing as is the case now ?—I should say they might be put *vivâ voce*.

3715. You think that the proceedings of courts-martial are now generally too lengthy ?—I do.

3716. And that they might be with advantage cut short ?—I do.

3717. (*Lt.-Gen. Eyre.*) Referring to Capt. Vivian's question to you about an assessor at the court-martial, would the commanding officer prefer having a civilian or a qualified military officer to act in that capacity ?—I should say he would prefer a civilian, a man who had been brought up to the law and who perfectly understood it.

3718. (*Lt.-Gen. Scarlett.*) How would you propose that he should be paid ?—He might be paid in the same way as Deputy Judge Advocates in India are paid, I should think.

3719. Are the Deputy Judge Advocates in India civilians ?—No, they are all military men.

3720. Then if you have a legal assessor you take a gentleman of the bar who probably has a good practice ?—So many would not be required. I was considering that it would only be in extreme cases where men would be tried, and consequently there would be fewer cases.

3721. (*Chairman.*) With regard to military punishments, do you think that, now that corporal punishment is done away with, it will be necessary to introduce any other punishment in the army in lieu of it ?—I certainly do.

3722. You think that the discipline of the army cannot be properly kept up unless there is some other punishment in addition to those which are now in existence ?—I think not.

3723. Can you suggest any punishment to take the place of corporal punishment ?—I myself thought that corporal punishment ought to be maintained for what I call the greatest blackguards in a regiment, who fear nothing else but the lash; they do not care for imprisonment, and the lash is the only thing that some of them care for, but I do not know that I could suggest anything in place of it.

3724. What do you think is the existing punishment that the soldier dreads most now that corporal punishment is done away with ?—Penal servitude is considered the next in order of severity.

3725. Do you think that they dread penal servitude more than solitary confinement ?—There are very few stations in England in which solitary confinement is carried out.

3726. But it has been stated to this Commission that there are means throughout this country of enforcing solitary confinement ?—I think solitary confinement for any lengthened period is the most severe punishment that could be carried out next to corporal punishment. I myself am against lengthened punishments—by that I mean penal servitude; but if a man got solitary confinement for a long period I think he would feel that as much as anything.

3727. Do you think that the alteration of the diet of the soldier is at all dreaded by him, such as giving him bread and water, for instance ?—They could not get that much longer than they do in prisons now. They can get bread and water for a week at present, and it is looked upon as a severe punishment. I think the general dieting of prisoners might be revised, with a view to making imprisonment more dreaded.

3728. Do you think that the punishment of shot drill may be carried farther than it is now ?—Yes, if it is properly carried out, but I do not think that drill

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is carried out properly in the prisons which I have been into.

3729. What alteration would you suggest?—That the rules as to picking up and laying down the shot should be strictly carried out. I have seen men instead of carrying it at full length of the arm, bring it up into their arms, and that is very easy work, comparatively speaking.

3730. What is the regulation with regard to the mode of carrying the shot?—They are not allowed to bend the knees in putting it down and picking it up, and I do not think that is sufficiently attended to.

3731. Is there anything in the prison discipline which you could suggest as to making the punishment more severe than it is at present, with a view of taking the place of corporal punishment?—I think if the men were to be kept more apart and in solitary confinement that would make it more severe undoubtedly.

3732. At the present moment those who are undergoing penal servitude have means of communication nearly all day long, have they not?—Upon that I cannot give a clear answer. I am not well acquainted with the rules of penal servitude prisons. I have not seen any since I have been home, I am only speaking about military prisons that I see.

3733. Could you suggest any other out-door work to be imposed upon a prisoner, which might be made valuable for the public service, and which would still be of a penal nature, such as building operations?—That is not hard work, that is more an amusement; I think I should prefer road making, or anything of that sort, but building the men would look upon more as an amusement than a hardship. I would not allow men outside the prison wall.

3734. I collect from your evidence that you think the only alteration that you could suggest in the punishments is, that of applying the present punishments rather more severely?—Yes.

3735. You have no new punishment to suggest?—I have no new punishment to suggest, only carrying out the prison rules more stringently.

3736. It has been suggested here by several witnesses that an alteration might safely be made in the mode of punishing non-commissioned officers, would you agree in that view?—I think so. A commanding officer has no alternative between having a non-commissioned officer reduced and letting him off.

3737. In the case of a serjeant, for instance, would you suggest that he should be punished as a serjeant, or that it should be necessary to reduce him to the next rank before punishing him?—I should say reduce him to the next rank.

3738. To that of corporal?—To that of corporal; and give the commanding officer the power of reducing corporals.

3739. Do you think there is any punishment which could be inflicted on a serjeant without reducing him at all?—I do not think it a good plan to punish serjeants, because the men, of course, hear these things, and they would look upon the serjeant as not being so good as he should be; and perhaps they might slight and insult him in some way or other.

3740. (*Capt. Vivian.*) If a serjeant were kept under arrest for so many days, for instance as you put an officer sometimes under arrest now, would you object to that?—That might be done; but at the same time it is a kind of thing which non-commissioned officers, I think, would not care so much about.

3741. (*Chairman.*) Has it occurred to you in your regiment to have to reduce a serjeant to the ranks, and afterwards to restore him to his rank of serjeant?—After a length of service. There are men that I have reduced and made serjeants again.

3742. Have you found that those men have lost any of their authority with the private soldiers?—No; in fact I think they make the best non-commissioned officers. They have seen their mistakes, and I think they do their duty quite as strictly, if not more so, than others. Of course they are men whom I would not allow to be promoted unless they have proved themselves to be deserving of reinstatement.

3743. (*Lieut.-Gen. Scarlett.*) Do you think that if you were to reduce a serjeant to be a corporal he would be as efficient as if he had not been reduced; that is to say that he would command the same respect from the men?—Possibly not; but at the same time it is the only way of dealing with them that suggests itself to me. But a corporal's duties are so very different from a serjeant's that I think he might do the duties without being looked down upon by the privates.

3744. (*Lieut.Gen. Eyre.*) Could you in some instances apply fines to the cases of serjeants, as is done in some continental armies?—Yes; but I should make them much heavier in proportion to the private.

3745. And with a power to appeal?—Yes.

3746. You would approve of that?—Yes, I would; I think it might be done.

3747. (*Capt. Vivian.*) How long has your regiment been in England?—13 months.

3748. Have you had many cases of flogging in those 13 months?—There was one case at Dover, I think, when I was away upon long leave.

3749. Now that flogging is abolished as a punishment, do you think there will be any greater difficulty in maintaining discipline in a regiment than there was before?—I think some men will not now hesitate to commit crimes for which, if flogging had been in force, the fear of the lash would have prevented them.

3750. Do you think it would be a good thing now to increase the power of the commanding officer in getting rid of bad characters?—I do.

3751. You know that in the regiments of household cavalry the commanding officers have the power of turning such men out of the regiment?—Yes.

3752. Do you think that, now that flogging is done away with, it would be a good thing that the powers of the commanding officer should be extended in that direction?—I do.

3753. If that was the case you do not apprehend any difficulty from flogging being abolished?—I do not.

3754. Have you ever found any men who have been flogged turn out good soldiers afterwards?—Cases of flogging have been very rare, and, as I say, only men of the very worst characters have been flogged.

3755. Do you not think that flogging was a demoralizing punishment and that it made the man so completely lose all self-respect that he really never did turn out well afterwards, and that it would have been better for the service to have got rid of him?—It would have been better for the service to have got rid of him. If commanding officers can get rid of such men that is sufficient.

3756. (*Lt.-Gen. Eyre.*) With reference to the questions which you are now answering how many men would you say you have in your regiment whose characters are so bad and whose conduct is so troublesome that you would like to get rid of them?—About half a dozen, I should think now.

3757. (*Lt.-Gen. Scarlett.*) Would you wish to get rid of those men unless they had been marked in some way, so as to prevent their re-enlisting?—No; as they might re-enlist.

3758. (*Lt.-Gen. Eyre.*) Are the offences of those bad men likely to be mostly of a civil or of a military character?—They are the kind of men that would be guilty of any crime whatever. Their crimes are principally military crimes, but they might be guilty of theft, for instance.

3759. You cannot say whether the crimes of those men that you would like to get rid of, are crimes of a moral character or of a military character?—They are principally of a military character.

3760. (*Capt. Vivian.*) Every fellow of that stamp is known perfectly well in a regiment by the officers and men as a bad character, is he not?—Yes, I have luckily had an opportunity lately, my regiment being over the strength, of getting rid of those men and

saying I would not take them on, but I have about six men now, I think, that cause more crime in the regiment than all the rest put together.

3761. (*Chairman.*) Is there any class of crimes which you would prefer to submit to a civil tribunal instead of a military tribunal?—I think all military tribunals ought to be so constituted as to be able to deal with all crimes.

3762. Have you found considerable difficulty in dealing with cases of embezzlement before courts-martial?—They are very intricate cases. I was on a general court-martial upon an officer in an embezzlement case, and it was a very tiresome case to deal with.

3763. Do you not think that that case might have been dealt with?—I do, in that case, but that is the only one which I can at present think of.

3764. (*Mr. Mowbray.*) Did you not, in the case to which you allude, find it utterly impossible to arrive at any conclusion as to the accounts?—We arrived at a conclusion about some of it, but we could not find the prisoner guilty of the whole of it. It was very difficult to bring it home to him.

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3765. (*Lt.-Gen. Eyre.*) What objection would there be on the part of commanding officers to hand over to the civil power all cases of a moral nature requiring trial, confining courts-martial to purely military offences; those moral crimes including large thefts deserving anything more than summary dealing, and all disgraceful acts of a certain kind?—I think I should deal with a soldier by court-martial for crimes of that description.

3766. For all crimes?—I think so. In embezzlement it is very difficult sometimes to get to the truth of the matter, but I think I should deal with all military men by courts-martial, if it is necessary to have them brought before any court.

3767. What would be your objection to having them tried by the civil power?—I should have no objection to it, but I do not see why the civil power should have to try the crimes of soldiers. I think if a man is a soldier he ought to be tried by a military court.

3768. Whether for a military offence or for a moral offence?—Yes.

The witness withdrew.

LIEUT.-COLONEL JAMES SINCLAIR THOMSON called in and examined.

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3769. (*Chairman.*) You command the 54th regiment, do you not?—I do.

3770. How long have you been in command of that regiment?—Two years.

3771. How long have you been in the regiment?—25 years; I am in the 26th year. I have never been in any other regiment.

3772. Will you tell the Commission what is the practice in your regiment with regard to the instruction of officers in their duties as members of courts-martial?—In former days an officer could not sit on a court-martial under six months. The subalterns are weekly examined by the adjutant, and the captains by either field officers or the colonel. No officer under three years' service is allowed to sit in general court-martial. Qualification to sit on district court-martial is six months' attendance at proceedings of all courts-martial and competent knowledge. That I have carried out hitherto.

3773. Do you think that any further means should be taken to instruct young officers in military law?—I do not quite see the object of their being so well instructed in military law. I think that all the cases now tried by courts-martial are very simple, generally speaking, and the facts laid down in the Queen's Regulations are very plain.

3774. But at the same time is it not the case that there are various instances of the sentences and findings of courts-martial being revised?—I think that is very seldom the case in a regimental or district court-martial.

3775. You think that it is oftener the case on general courts-martial?—I have never been on a general court-martial in my life.

3776. What is the nature of the examination in military law through which your officers go?—I believe there is no special examination for them in military law before they get their commission, but I do not know what that examination is. Before ensigns are promoted to the rank of lieutenants they are examined on the customs and powers of courts-martial, and again, before they become captains.

3777. Does a subaltern of your regiment, in passing from ensign up to captain, come under your own supervision in that respect as to his knowledge?—Either I or the major examine the captains once a week; but that examination is principally upon drill, and not so much upon military law.

3778. How often is an officer examined on military law?—It is not the practice in my regiment to examine them on military law especially.

3779. You heard the evidence given by the last witness; do you, generally speaking, concur in the observations which he made?—Generally, I do. I think that it would be a very good thing to do away with regimental courts-martial, giving more power to commanding officers.

3780. Would you abolish regimental courts-martial altogether?—I think if the commanding officers had more power it would be better.

3781. If you gave the commanding officer more power, would you abolish regimental courts-martial?—I would.

3782. Under such circumstances would you give the soldier, in all cases, the right of appeal to a court-martial?—I would give the soldier the right of appeal, with this proviso, that if the appeal was found vexatious the man should be punished for making the appeal; otherwise, I think it would cause an immense amount of trouble.

3783. (*Lt.-Gen. Scarlett.*) Is not a regimental court-martial rather a protection to a man against any ebullition of temper or disposition to severity on the part of the commanding officer?—Yes; I suppose, looking at it in that way, it is a protection to the men. I think that, as a rule, men would rather have their cases settled by the commanding officer than be tried by court-martial.

3784. (*Lt.-Gen. Peel.*) But you say that if a man appealed, and on the appeal was found guilty, you would give him a heavier punishment than he would have had in the first instance?—I think there must be some check to the power of appeal in all cases.

3785. (*Capt. Vivian.*) Then the appeal would be only to a district court-martial, would it not?—Then I should give him the punishment that could be awarded by a district court-martial, which would be in excess of that awarded by a sentence of the commanding officer.

3786. That would be for the court to decide, would it not?—Yes.

3787. (*Lt.-Gen. Peel.*) I understand that you would give a man a heavier punishment if he appealed from a commanding officer to a district court-martial than the commanding officer would have given him if he found him guilty?—If he says that he is not guilty of the crime I would allow the appeal to go on, but I would not allow any appeal upon the sentence.

3788. For instance, in the case of a charge of drunkenness, if the man said he was not drunk, would you allow him to appeal?—Then I should allow him to appeal, but I would have him tried by a garrison court-martial on framed charges, and then he would be much worse off than if he were settled by his commanding officer.

3789. (*Lt.-Gen. Scarlett.*) You think that that would be necessary as a check upon the right of

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appeal?—I do. If the man appeals he will appeal upon a charge framed by the commanding officer against him.

3790. (*Capt. Vivian.*) Do you agree with the last witness, that if the power of the commanding officers were extended to the limit which he proposed, all cases in which a commanding officer should think it advisable to punish a soldier by imprisonment should be recorded in the orderly room in writing, the evidence being taken before the commanding officer for the prosecution, as well as for the defence of the prisoner, upon oath?—I do not.

3791. At present there is no record taken of summary punishment in the orderly-room, is there?—There is no record of the evidence.

3792. And you would object still, supposing that the power of the commanding officer was extended in order that regimental courts-martial should be done away with, to the commanding officers being obliged to keep a record in writing of the proceedings, and of the evidence upon which they have sentenced the prisoner?—That is making it a court-martial, as it were. Do you propose that the same amount of evidence as is now adduced on courts-martial should be taken by the commanding officer and kept in a book?

3793. It has been suggested that, in order that regimental courts-martial, which are now composed, as is supposed, of officers who are inexperienced, should be done away with, the commanding officer should have his power of punishment extended; that a prisoner should be brought up before him in the orderly room, that the adjutant, the captain of his company, and the non-commissioned officers of his company should be present; that then the commanding officer should take evidence in support of the charge against the prisoner upon oath; that the prisoner also should give his defence, supporting it by witnesses also upon oath; and that then the commanding officer should, as a magistrate does upon the bench, dispense whatever justice he thought the case required. As commanding officer of a regiment, would you prefer that system to the present system of referring to a regimental court-martial a case which was of so grave a character that you had not the power of dealing with it alone?—Yes, very much.

3794. That is to say, that you would prefer the commanding officer being invested with a somewhat similar power to that which a civil magistrate now possesses?—Yes. In that case I should condense the evidence, and have each witness sign it in a book.

3795. (*Lt.-Gen. Eyre.*) Am I not right in considering that all that Captain Vivian suggests as a *modus operandi* is carried out, with the exception of recording the evidence upon oath, and that all the parties he names are present?—Always.

3796. (*Lt.-Gen. Scarlett*). You record the names of the witnesses in the defaulters' book, do you not, although you do not record the evidence?—Yes, they are always in the defaulters' book.

3797. (*Lt.-Gen. Peel.*) A regimental court-martial is always assembled for the purpose of administering a heavier punishment than the commanding officer can give, is it not?—Certainly.

3798. As a matter of fact, there is very seldom any doubt about that, is there?—Not the least. It is of no use bringing a man before a court-martial for a smaller punishment than a commanding officer can give him.

3799. And therefore, if the power of the commanding officer were extended, would there not be less occasion for courts-martial?—Certainly.

3800. (*Chairman.*) Do you agree with the last witness with reference to doing away with the present system of compulsory courts-martial upon the fourth offence of drunkenness, and giving greater power to commanding officers of substituting stoppage of pay for the present punishment for drunkenness?—I do. I think that imprisonment to any extent for drunkenness is a mistake. It is making good men do a bad man's work. I should prefer to try a system of fines. It has the further disadvatage of inciting men to remain absent all night, when drunkenness brings the liability to punishment so much more severe than absence without leave.

3801. But you would couple the system of fines, I presume, with some other punishment?—Certainly, but not to a great extent.

3802. You would merely couple the system of fining with some other punishment, the fine being the principal element of the sentence?—Yes, increasing it in case of the repetition of the offence.

3803. (*Lt.-Gen. Scarlett.*) Do you think that imprisonment deters a man from drunkenness, or reclaims him from drunkenness?—Very rarely; I think, as a rule, men do not go out meaning to get drunk, but they go down in the town and meet acquaintances and get drunk.

3804. (*Lt.-Gen. Peel.*) It depends upon the amount of money they have in their pockets, does it not?—Quite so.

3805. (*Capt. Vivian.*) But does not a man who has been imprisoned for drunkenness come out with a lot of arrears of pay, very likely?—No; his pay is stopped. The Government only allow 6*d.* a day for his subsistence, which goes to the gaol. He gets no back pay.

3806. (*Chairman.*) With regard to the punishment of non-commissioned officers, do you agree with the last witness that it is desirable to institute some punishment for non-commissioned officers, without being necessarily obliged to reduce them to the ranks?—I have a system of reducing a corporal a certain number of steps in the roll, and I see no objection to reduce a serjeant to rank of corporal,

3807. Evidence has been given before this Commission to the effect that a reduction on the roll of serjeants would not be a punishment, do you agree in that?—It is no punishment.

3808. Inasmuch as a serjeant is generally promoted without regard to his standing in the regiment?—Yes; I think that the only punishment that is at all applicable to a serjeant would be fines, and reduction to lower rank of corporal.

3809. You think that no double duties in a regiment could be assigned to him without diminishing the respect paid to him by the private soldier?—I would not adopt that, except for irregularities on those duties.

3810. Do you inflict that punishment now?—Yes.

3811. Do you not think that it would be possible to carry that punishment still farther?—It would be quite possible.

3812. Would it be advisable?—I would not punish a serjeant.

3813. For instance, might not the command of picquets be made available as a punishment which would be felt as a severe punishment by non-commissioned officers, without diminishing the respect paid to them by the soldiers?—As a rule, the serjeants are very seldom put under arrest, except sometimes for neglect of duty. For any irregularity on guard or picquet, they get an extra guard or picquet; and for any neglect of duty as orderly, I should give them an extra orderly duty, or three orderly duties.

3814. Would you think it advisable to carry that system any farther than it is carried now?—I would not.

3815. Is it the system in your regiment, or in the army generally, to promote corporals to serjeants according to their standing?—I promote them by seniority, unless there is something against it.

3816. Then do you think that as regards corporals it would be considered a punishment to reduce them in their own ranks?—I am sure it would; it stops them in my regiment from getting promotion so quickly as they would otherwise have it.

3817. You do reduce the corporals then in their own rank in your regiment?—I do.

3818. (*Lt.-Gen. Scarlett.*) That is to say, you do not select them where you otherwise would have selected them?—I do not select them, as I should

otherwise have selected them from the top of the list.

3819. (*Chairman.*) Do you keep a list in your regiment of the serjeants and corporals according to their standing?—Yes.

3820. As a punishment you put down a corporal several steps?—Yes, or to the bottom of the roll.

3821. But as regards serjeants you think that that punishment would not be applicable?—It would be no punishment. The only promotion a serjeant gets is colour-serjeant, and you take them by selection.

3822. Are you in the habit of reducing a colour-serjeant?—You may take away his colours; it very rarely happens, but I have done so.

3823. Would it be considered a punishment to take away from a serjeant the post of musketry instructor?—Yes.

3824. Is it ever done as a punishment, and not because of unfitness?—It has not been done in my regiment.

3825. Do you think that a serjeant is ever taken from the post of musketry instructor, and as a punishment reduced to a simple serjeant?—I do not know; but I should think not, unless he is incompetent for his duties as a serjeant instructor of musketry. If he is not fit for a musketry instructor he is not fit for a serjeant. It is not reduction, I consider, to remove a man from being a musketry instructor to be a serjeant.

3826. But would it be regarded as a punishment to a musketry instructor to be deprived of that office and to be made a simple serjeant?—Yes, I think they like the post of musketry instructor; but very few men are qualified for it.

3827. (*Lt.-Gen. Eyre.*) The punishment in that case is the fact that he loses a shilling a day, is it not?—That is the fact.

3828. (*Lt.-Gen. Scarlett.*) But should a musketry instructor commit any crime, such as absence without leave, or drunkenness, would you consider it a proper punishment to reduce him to a serjeant?—I would not.

3829. What course would you take?—I would try him the same as any other serjeant.

3830. (*Chairman.*) Do you think that any new punishment could be introduced for non-commissioned officers?—I think that a system of fines would be a good thing to adopt, and reduction to lower rank.

3831. (*Lt.-Gen. Eyre.*) You would give the man the power of appealing, would you not, as it affects his pay?—That power I should give to a court-martial. If he was not satisfied with the award of his commanding officer he should appeal to a court-martial upon charges sent in by his commanding officer, and he should be sentenced accordingly.

3832. (*Lt.-Gen. Scarlett.*) And you would consider that a man who had so appealed would probably meet with a heavier sentence than his commanding officer would have given him?—I think so.

3833. (*Lt.-Gen. Eyre.*) A commanding officer would, of course, take very good care to be safe in that respect?—I think so.

3834. (*Chairman.*) Will you state to the Commission your view with regard to the Regulations under which a non-commissioned officer is now punished; does a serjeant, or does he not, lose any distinction which he has gained as a serjeant, except his medals, when he is once convicted by a court-martial?—He does not necessarily lose his medals by conviction of court-martial. He would lose his chance of a good conduct medal and one good-conduct badge.

3835. What else does he lose?—I do not know that he loses much else, except that his service as a serjeant does not count for his pension.

3836. (*Lt.-Gen. Eyre.*) If he is reinstated would not his previous service as a serjeant reckon towards the pension of a serjeant?—I think not. It is laid down in the Warrants, and I would rather refer you to the Warrants as to that.

3837. (*Lt.-Gen. Peel.*) Do you not think that in the case of a man having been reduced, if he is a good-enough man to be reinstated, the commanding officer should have the power of doing away with the disadvantages which now exist, consequent upon his having been tried by a court-martial?—I should put a limit to that, say, if he was a serjeant for 10 year afterwards. He must show that he was steady.

3838. The commanding officer is the best judge of that, is he not?—I would make him hold his position for a certain time before I reinstated him in all his advantages.

3839. (*Capt. Vivian.*) But would you not give the commanding officer power to restore him when he likes?—Not when he likes, but with a limit that a serjeant must be a certain number of years a serjeant after the second time before the commanding officer could have the power, so to speak, to quash his former court-martial.

3840. (*Lt.-Gen. Scarlett.*) In point of fact would you partially rescind the rule which now exists, that a non-commissioned officer shall not be eligible for a good conduct medal, or gratuity, if he has not been 18 years clear?—I would modify it, certainly. I think that, if a serjeant has been 10 years in the rank of serjeant, he ought to have the good conduct medal and the gratuity.

3841. (*Chairman.*) You heard the evidence of Colonel Agg upon the substitution of some punishment for corporal punishment which has now been abolished, could you suggest any punishment in substitution for corporal punishment?—I have thought of it, and I cannot suggest any substitute.

3842. What do you think is the punishment which now exists which can be administered with the greatest speed, and with the greatest effect?—The moment a man is brought up before you his punishment commences.

3843. Supposing a man was guilty of insubordination, what punishment, which now exists, do you think is the most efficacious for preserving discipline?—I think that the soldier dreads solitary confinement most; but it is a punishment I am not very fond of myself. I am certain they dread solitary confinement more than anything else.

3844. (*Lt.-Gen. Eyre.*) Articles 782 and 783 of the Queen's Regulations are as follows:—"A soldier, "who has forfeited his claim to the advantages "towards good-conduct pay and pension derivable "from his former service, is to be recommended for "restoration to these benefits as soon as he shall "have established his claim thereto by an undeviating course of good conduct for five years in case "of a first conviction, for seven years in case of a "second conviction, or for ten years should any "circumstance of an aggravating character have "attended the commission of the offence on account "of which he had incurred the penalties in question. "He may, however, be recommended for such restoration within half the periods here prescribed, "provided that he has not only shown unremitting "good conduct, but has also given good, faithful, or "gallant service of a constant and sustained character "in the field, or has performed some specific act of "valour in the field, reflecting honour on the regiment and on himself. The period of probation is "in all cases to be reckoned from the release of the "soldier from imprisonment and his return to duty." Do you see any reason why some such regulation should not be applied also to serjeants with reference to their medal and gratuity?—I think they do. I see no reason why they should not apply, but I should make them serve a certain number of years as serjeants, uninterruptedly, before they were recommended for the gratuity.

3845. That would hold out some hope to them at all events, would it not?—Yes, I think the serjeant ought to get the same advantages as the soldier, with that limit or proviso.

3846. (*Lt.-Gen. Peel.*) First you would restore him as a serjeant, and then after five years of good conduct you would have the power of placing him in exactly

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the same position as if he had never been tried before?—Yes, exactly.

3847. (*Chairman.*) You heard the evidence given by Colonel Agg with regard to putting the questions down in writing, do you agree that it would be better to put them *vivâ voce*?—I think it is a bad principle to make the junior ensign vote first.

3848. How would you suggest that they should give their votes?—I think in writing is a very good plan.

3849. (*Lt.-Gen. Scarlett.*) But would you have the questions put in writing on a general court-martial on an officer, as they are at present?—I never was on a court-martial on an officer, but I think if a court-martial is to be submitted for confirmation it must be in writing.

3850. (*Mr. Mowbray.*) But do you think it necessary that the question itself should be put down in writing and handed to the court before it is put to the witness?—No.

3851. (*Mr. Headlam.*) Of course it would be more convenient, would it not, if there was a short-hand writer to take down the questions?—I never was on a general court-martial; I can answer about district courts-martial; the evidence there is all taken down in writing in question and answer, but I would not do away with the proceedings as we call them now. I think they are very clear at present.

3852. (*Capt. Vivian.*) If instead of the president of the court-martial, as at present, having all the inconvenience of writing down every question and every answer it was done by a short-hand writer, do you think there would be any objection to that?—There would be no objection, but I think there is not much trouble in the way it is done now, and I think it would be better to do it as it is done now. I am speaking only of district courts-martial. I think the proceedings are not so long as to require their being shortened.

3853. At present the president of a court-martial writes down all the proceedings, does he not?—Not necessarily; one of the members of the court may do it.

3854. But in order to shorten the proceedings should you see any objection to all that being done by a short-hand writer?—I see no objection to it, but who would have to copy the proceedings out again in a fair hand for the confirming officer?

3855. (*Chairman.*) Have you any suggestions to offer with regard to punishments?—I think the greatest boon would be to give the commanding officers power to dismiss bad characters.

3856. You do not believe that that would lead to the commission of crime for the purpose of getting dismissed?—No.

3857. (*Lt.-Gen. Eyre.*) When they are discharged for bad conduct do you deport them to their parishes?—Yes.

3858. (*Lt.-Gen. Scarlett.*) If they are discharged for bad conduct at present they must be marked, must they not?—They must be marked with the letters "B. C;" but a very simple means of overcoming the difficulty would be to have every one, officers and men, marked with a crown or something of that kind, on entering Her Majesty's service; there could be no objection to this, and it would be a great check to desertion and security against fraudulent enlistment, as every man offering himself for enlistment with the mark upon him would be obliged satisfactorily to account for his former service.

3859. Would you discharge them without being marked?—I should like to do it myself; but I do not think it would be a good thing to do.

3860. Would you like other colonels to do it?—No; I am certain it would be a very good thing if it could be done in some way.

3861. (*Lt.-Gen. Eyre.*) Now that corporal punishment is abolished, and as public opinion dwells very much upon the means of improving the *morale* of the service, and making it more sought after by the better classes, can you suggest any means by which that result in any degree may be arrived at?—I cannot.

3862. With the object of reducing crime in the army, and of preventing the necessity for punishment, do you think that any system of rewards, indulgences, and privileges might be introduced for the comfort and benefit of the good and well drilled men, not putting the country to any expense, but merely exempting such men as much as possible from such parades and roll-calls as might be found practicable, giving them complete freedom of action to go where they please, provided they neglect no duty and disobey no order; giving them leave to be absent till a late hour at night, and giving them furloughs on an increased scale; selecting them, when permitted by the Government, to go harvesting; giving them the means and the time to follow their trades, if they have any; letting them be paid weekly if they prefer it to being paid daily, and in fact considering their ease, comfort, and advantage in every possible way; and would not such a system as this eventually tell upon the whole of the men in the regiment, and upon their friends out of the regiment?—I think some of those suggestions are good, but there are some that I should not like. I do not think you would get better recruits by those means.

3863. (*Lt.-Gen. Peel.*) What is the largest amount of stoppages that a commanding officer has now the power of inflicting?—Five days for absence.

3864. Has it increased in proportion to the increased pay that a soldier now receives?—Yes. The increase of pay causes a corresponding increase of pay stopped.

3865. With regard to the men being paid weekly or daily, that is a point upon which a question to which it appears great importance was attached was put in the House of Commons the other day. Would the men prefer being paid daily or weekly?—I suppose they would prefer being paid weekly.

3866. Do you think it would be advantageous to give well-conducted men the power of receiving their pay weekly instead of daily?—That should be done with great caution, I should think. As a rule I should prefer their being paid daily.

3867. (*Capt. Vivian.*) But, as a sort of reward to good conduct men, do you think it would be well to create the distinction of paying them weekly instead of daily?—It would be; married men are paid weekly now.

3868. Would you give any commanding officer the power to say to a well-conducted man, "You shall be put on the weekly pay list"?—I am sure they would like it.

3869. (*Lt.-Gen. Peel.*) Do you think it would be advantageous if commanding officers had the power of granting that privilege?—I do.

3870. (*Lt.-Gen. Scarlett.*) Married men can have their pay weekly now, can they not?—They can.

3871. (*Chairman.*) You heard what the last witness said with reference to the crime of embezzlement, do you agree with him that it would be advisable to submit those cases more to the civil tribunals than is the practice at present?—I do, certainly.

3872. Would you make it a rule in all cases?—As to embezzlement, or theft, I would. It is now the rule with regard to the thefts as much as I can make it so.

3873. (*Lt.-Gen. Peel.*) But you have the power, have you not, of handing a man over to the civil power?—Yes, I have, and it is a very good thing.

3847. (*Lt.-Gen. Eyre.*) Would you apply that to disgraceful cases?—No, I should try them by court-martial.

The witness withdrew.

Colonel Samuel Netterville Lowder, C.B., a member of the Commission, examined.

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3875. (*Chairman.*) Will you state what post you hold?—I am Deputy Adjutant-General and senior colonel in the Royal Marines.

3876. How long have you served in that corps?—Nearly 35 years.

3877. How long have you held the rank of commanding officer?—I have held the rank of colonel since the year 1864. Part of that time I was commandant of a division.

3878. The marine force is subject partly to military law and partly to naval law, is it not?—Yes, according to circumstances.

3879. When is that force subject to military law?—When they are serving on shore in the United Kingdom as a general rule. There is an exception when they are serving on shore in foreign countries formed into battalions or brigades, as they are sometimes.

3880. Serving in a battalion on foreign service they are subject to the Marine Mutiny Act?—To the Marine Mutiny Act, which I call military law.

3881. How does the Marine Mutiny Act differ from the Military Mutiny Act?—It is assimilated to the Army Mutiny Act in every possible way. Of course there is a good deal in the Army Mutiny Act which can have no reference to marines; but as regards the punishment of offences and military economy generally, recruiting, and so forth, it is very nearly assimilated in all its provisions to the Army Mutiny Act, and from year to year we adopt any alterations which are made in the Army Mutiny Act, and which have any bearing upon or which are likely to have any relations with our force.

3882. Do you have courts-martial of the same description, general, district, and regimental?—Exactly the same, excepting that we call a regimental court-martial a divisional court-martial.

3883. (*Capt. Vivian.*) Detachments of marines serving on board ship are subject to naval discipline, are they not?—Yes.

3884. But if those detachments of marines are landed to unite with a military force on any expedition they are instantly under military law, are they not?—They require an order from the senior naval officer under whom they are serving; that is specified in the Marine Mutiny Act.

3885. Supposing the Mediterranean squadron, having on board each vessel a detachment of marines, desired to unite for the purpose of a second descent on Egypt with a military force, directly those detachments of marines left their ships and became joined to the military force they would come under the Army Mutiny Act, would they not?—No, the officer commanding would not be authorized to carry out military law without an order in writing from the senior naval officer whose command he had just left.

3886. (*Chairman.*) Are the forms of procedure nearly the same in naval courts-martial as in military courts-martial?—As nearly as possible.

3887. In what do they differ?—In no particular.

3888. Are the convening authorities the same?—The Board of Admiralty alone has the power of convening a general court-martial, or they may delegate the power to an officer of a certain rank.

3889. How are the courts composed?—Exactly the same as in the army. We have made the same alterations in the Marine Mutiny Act as were made in the Army Mutiny Act last year.

3890. Are the punishments which they have power to award the same?—As nearly as possible; I do not know of any difference.

3891. On what authority is a district or general court-martial summoned in the marines?—The order for the trial of a marine by district court-martial, as a matter of course, proceeds from the officer in command of the district. Of course he is generally an army officer, but circumstances might happen under which he would be an officer of marines; and that is provided for in the Mutiny Act.

3892. Is the court exclusively composed, when subject to the Marine Mutiny Act, of marine officers, or may military officers form part of it?—It is composed of officers of the army and marines. It is provided for in the Mutiny Acts of both the army and the marines and at, I think, Article 146 of the Articles of War. There is a peculiar arrangement when a general court-martial takes place, particularly if it is on an officer. It is often considered desirable to have a mixed court, and the commandant of the division applies, through the Deputy Adjutant-General, to the Admiralty, and they apply to the Commander-in-Chief to order a certain number of officers to sit as members of that court.

3893. By whom is the warrant issued?—The warrant must be signed by two Lords of the Admiralty.

3894. How is the president appointed?—The president is selected by the Deputy Adjutant-General, and he is appointed under the authority of that warrant.

3895. Does the Deputy Adjutant-General assist at the court-martial?—Not in any way, except that the documents pass through his hands. They are addressed to him, and he addresses himself directly to the commandants of divisions.

3896. Who is the prosecutor on those occasions?—An officer is usually appointed for the purpose.

3897. By whom?—By the commandant of the division.

3898. Whether marine or military, according to circumstances?—The commandant of the marine division in the first place represents the case to the Deputy Adjutant-General, at the same time submitting the charges on which he proposes the prisoner should be tried. The Deputy Adjutant-General submits these charges for the approval of the Admiralty, and requests that a warrant may be issued to convene a court-martial, and when he gets this authority he instructs the commandant to take the usual measures for assembling the court, one of which is the selecting an officer to act as prosecutor who may be best able to manage the case.

3899. In cases of capital punishment, who is the confirming authority?—The Crown, the same as in the army, and also in cases of cashiering.

3900. Have you in the marines any courts of inquiry?—Yes, we use them rather frequently.

3901. Have you found that they cause any dissatisfaction amongst the officers?—Not that I have ever heard of.

3902. What powers do your courts of inquiry exercise?—The instructions to a court of inquiry usually are not to give an opinion, but to take evidence as an assistance to the commanding officer in coming to a conclusion.

3903. To whom do they report?—To the commandant of the division who order the court to assemble.

3904. In the marines is an officer ever subject to the loss of his commission or to other punishment in consequence of the report of a court of inquiry?—I have never heard of such a case.

3905. From your experience in the marines, should you say that the courts of inquiry had not caused any dissatisfaction amongst the officers?—On the contrary, I think they are viewed with satisfaction. We use them more for cases of embezzlement and things of that kind, and I think more with regard to non-commissioned officers and men than with regard to officers; but I know several cases where courts of inquiry have been held on the conduct of officers previous to courts-martial. In fact, I have ordered them myself before now.

3906. Supposing that an officer finds himself aggrieved by the report of a court of inquiry, is it usual to grant him a court-martial if he wishes it?—I never heard of a case of that kind.

3907. You never heard of a court-martial being refused in such a case?—No; as a rule a court-martial generally follows a court of inquiry, I think.

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3908. I think you said that a court of inquiry does not pronounce any opinion?—No, unless it is ordered to do so.

3909. But when it has been ordered to report its opinion, and the court-martial has followed, could you state whether the opinion of the court of inquiry has been generally confirmed or the reverse?—I should say that it has been generally confirmed.

3910. I understand you to say that you think that a court of inquiry is a very useful tribunal?—I think it is a very useful thing as preliminary to a court-martial. It enables a commanding officer to form a much better conclusion, particularly if it is a difficult or an intricate case, and besides it saves him a great deal of trouble in going into the matter.

3911. When you have to refer a case to the Judge Advocate for a legal opinion, how is the distinction made as to the authority as to which the court shall submit, if the court is composed equally of military and marine officers?—The proceedings of all general courts-martial assembled under the authority of the Admiralty are referred to the Admiralty for examination and confirmation.

3912. You have heard the evidence given with regard to military courts-martial; have you been led by what you have heard to suppose that the tribunal in the marines is a better tribunal in any respect than the military tribunal?—I see no difference in them. The authorities are rather different, but the authority is exercised in the same way.

3913. (*Lt.-Gen. Scarlett.*) The only difference is that general courts-martial are referred to the Admiralty instead of being referred to the Queen?—They are referred to the Queen if the involve capital punishment or cashiering. There is a peculiarity about district courts-martial. When a marine is tried by a district court-martial the proceedings are confirmed by the General commanding the district, and they are then sent to the Secretary of the Admiralty, who sends them to my office. In the event of there being anything like an irregularity, it raises rather a difficulty; because those proceedings having been already confirmed by the general of the district, I have no authority to refer them back to any one for revision. I know a case now where there was an irregularity, but it was not referred, because I had no authority to do it, and the sentence is at present being carried out. It is nothing of any great importance. Therefore, I think, that if those proceedings, instead of being referred to the Admiralty, were sent to the Judge Advocate-General, like all the rest, it would be much better.

3914. (*Chairman.*) Is there any reason why marines on board ship while serving in England should not be subject to military courts-martial, as other branches of the army are?—I think the difference with them would be trifling, so far as the crimes and punishments went. It would involve a little difference of adminstration; but I think it would be very distasteful to the naval authorities. In the first place the marines are raised and paid under a special Act of Parliament, and this Act is passed specially for their guidance when serving on shore, which is looked upon rather as being exceptional than as being an ordinary part of their service.

3915. Does the Marine Mutiny Act differ in any material point from the Army Mutiny Act?—No, it follows the Army Mutiny Act as closely as possible for the purpose of crimes and punishments and recruiting.

3916. But you think there is a feeling amongst the marines which would make any change in the tribunal distasteful?—I think that there would be great difficulties attending it.

3917. (*Mr. Mowbray.*) Do you mean that the feeling of the profession would be against it, or that the objection would come from the departments?—From the departments.

3918. (*Chairman.*) Are the summary punishments in the marines the same as those in the army, or as those in the navy?—They are as nearly as possible the same as in the army. Our Articles of War in that part where the powers of commanding officers are defined are exactly the same as those in the army with regard to the amount of imprisonment.

3919. Corporal punishment is still maintained in the navy, is it not?—In the navy, but not in the marines when they serving on shore. It is abolished under the new Mutiny Act.

3920. Is it abolished on board ship?—On board ship the power still remains, but it is very much limited.

3921. What is your opinion with regard to the maintenance of corporal punishment?—I think it is a very great misfortune to the service generally that the power has been taken away altogether.

3922. Can you suggest any other punishment in lieu of it?—The only thing which I could suggest would be solitary confinement, or confinement in dark cells in extreme cases.

3923. You think that is the severest punishment?—I think that it is the severest punishment if it is carried out effectively.

3994. Several witnesses have given it as their opinion that penal servitude is dreaded more by the soldier than solitary confinement; that is not your opinion?—No; I think that for short sentences solitary confinement would be much better; I believe that it is commonly called separation. What I should recommend as constituting solitary confinement would be to make a prisoner do a certain amount of some kind of work in his cell, such as picking oakum, and to do a certain amount in the day, and if he did not do it I would mulct him of his provisions. I have known that done with great effect in civil gaols.

3925. In the marines is the same system followed out with regard to non-commissioned officers as in the army; that is to say, that it is necessary to reduce a serjeant to the ranks?—Yes, there is no other course.

3926. You cannot reduce a serjeant to the rank of corporal?—No.

3927. Should you think it unadvisable to make any change in that respect?—I think so. I should not like to burden the list of corporals with reduced serjeants.

3928. But does it never happen in the marines that a serjeant is reduced and then restored to his rank?—Yes, very often.

3929. Does not that injure the man in the eyes of the common soldiers?—Not as a rule, so far as my experience goes.

3930. Would you allow a non-commissioned officer to be punished without losing his rank?—I think it is rather a difficult question to answer.

3931. But the reason at the present moment, I believe, why it is compulsory to reduce a serjeant to the ranks is, that when a non-commissioned officer has been punished he loses the influence which he had over the men; is not that so?—It is supposed by some to have that effect.

3932. But that is the real groundwork for the present practice, is it not?—The only suitable punishment which strikes me at present would be to place a serjeant or a corporal lower on the roll; but I have heard it stated here in evidence that, as far as serjeants are concerned, that is not considered a a punishment.

3933. In the marines do you take serjeants for promotion according as they stand on the roll?—We take them partly by seniority and partly by merit. We have a great many men who are recommended for distinguished service, and for gallant service, and for particular service, and their claims are taken into consideration as well as those of the seniors, but the basis of the system is understood to be seniority, although a certain regard is had to efficiency.

3934. But merit has its effect, has it not, in the choice which you make?—Yes,

3935. Do you think then that it is considered a punishment by non-commissioned officers to be reduced in their roll?—I think that it is, and I think that it would be if properly carried out.

3936. With regard to corporals in the marines does the same system of promotion prevail, is it entirely by seniority, or by merit, or by both combined?—We allow a certain number of soldiers, who must have served a certain time, and who are anxious for advancement, to qualify themselves for lance-corporals. Character is taken into consideration, in the selection of these candidates, and when they have passed an examination they are placed upon the list and promoted to vacancies at the discretion of the commanding officer.

3937. And you think that the commanding officer generally looks to the position of the men on the roll in the first instance?—I think that he looks to the efficiency of the men a good deal, his object being to get good non-commissioned officers, and the same thing applies to serjeants. Corporals, as a rule, are not promoted to the rank of serjeant until they have passed a qualifying examination.

3938. Can you assign any peculiar reason why a serjeant should not be punished without reducing him, if an adequate punishment can be found?—If a punishment could be found, I think that it would be desirable at all events to try the experiment, but it should be a punishment which would not outwardly degrade him in the eyes of the men and in the eyes of his brother non-commissioned officers.

3939. Could you suggest any punishment which might be inflicted on a non-commissioned officer without degrading him in the eyes of the soldiers?—I am hardly prepared to answer that question now.

3940. Do you think that fines or loss of pay would be effective?—I think that it would be the nearest to it.

3941. Or the imposition of extra duties?—Yes. I would fine him and perhaps deprive him of some privileges or indulgences which the others enjoyed.

3942. If you were to deprive him of the claim which he has for long service to a certain extent, do you think that would be effective?—I think that that would certainly have a strong effect.

3943. But you would not recommend that the punishment of imprisonment or anything of that kind should be inflicted on a non-commissioned officer without reducing him?—No.

3944. (*Lt.-Gen. Scarlett.*) Would a non-commissioned officer under punishment have the same respect paid to him as a non-commissioned officer not under punishment?—I think that he would if the punishment did not carry any outward appearance of punishment of it.

3945. (*Lt.-Gen. Eyre.*) Has not a commandant of marines the power of summarily reducing a non-commissioned officer to the ranks?—Yes, that power is specially given in the Marine Articles of War. He has the same power in that respect as the colonel of a regiment.

3946. (*Lt.-Gen. Scarlett.*) Would he reduce him for crime, or only for inefficiency?—For crime.

3947. Without a trial?—He can do it, and I know several cases where it has been done, but they have always been strong cases.

3948. (*Chairman.*) Could you make any suggestions to the Commission with regard to punishments for private soldiers?—I quite agree with the evidence of several of the witnesses who have been examined before the Commission, that the powers of a commanding officer for summary punishments might be greatly increased, and that he might be placed more in the position of a magistrate, or perhaps that of a captain in the navy, who can award imprisonment up to three months for certain offences, and who can punish summarily for desertion without a court-martial.

3949. What punishment can a captain in the navy give for desertion?—I think he can go up to 56 days.

3950. Can a captain in the navy award penal servitude?—No, but he can give imprisonment in any gaol, either in the gaol at Lewes or in any civil gaol; and he can inflict forfeiture of pay to a very much larger extent than is allowed to a commading officer in the army.

3951. What is the extent to which a naval officer can award forfeiture of pay?—I believe that there is a scale, and the amount of forfeiture is regulated according to the length of time the men may have been absent. With regard to desertion, perhaps I might be allowed to make one suggestion The Article of War says that the fact of desertion may be legally established in the absence of the man by a regimental court-martial, and the proceedings of that court are received before a court-martial as evidence, and a man can be convicted on it, provided that he is identified. Such being the case, I think that the commanding officer might take the place of the court there. If the fact has been established before a regimental board of officers, and the proceedings of that board can be taken as *de facto* evidence of the desertion before a court, the power to award punishment might, in that case, be placed in the commanding officer's hands the same as it is in the hands of a captain in the navy, without going through the form of a trial. That would lessen the number of regimental courts-martial considerably.

3952. You have been a good deal on board ship, I presume?—I have.

3953. Did you ever find any dissatisfaction among the sailors at the great power which the captain has?—I think not.

3954. Have you ever heard it made a ground of complaint that he has too much power?—No; I have heard individuals complained against, but not the system.

3955. Do you think that there is the same satisfaction in the navy with regard to courts-martial and the power of officers as exists in the army?—As regards the men I think that the men are equally well satisfied, but I am not prepared to say anything about the trials of officers, or what may be the feeling among them.

3956. But from your experience of the feeling of the navy should you have any dread of dissatisfaction in the army if the same powers were given to military officers as are now possessed by naval officers?—I should not.

3957. (*Lt.-Gen. Eyre.*) Do you not think that there is a little difference to be considered in the position of a naval officer in a ship at sea without any but his own resources in that ship and the commanding officer of a regiment ashore with unlimited means?—There is a very great difference, and a naval captain often has great difficulty in carrying out minor punishments, particularly in a small ship. It is one of the greatest difficulties which he has to contend with, and in consequence the scale of punishment is very minutely laid down in the Discipline Act in order to strengthen the hands of the commanding officer.

3958. (*Mr. Mowbray.*) Have you any greater powers of discharge in the marines than there are in the army?—The power of discharge is vested in the Lords of the Admiralty. A marine can only under any circumstances be legally discharged, except by sentence of a court-martial, or by an Admiralty order through the Deputy Adjutant-General. This is specified in the 20th Article of War.

3959. Is he always marked with the letters "B.C." on discharge?—Only when it is ordered by court-martial.

3960. Then there is a discharge by the Admiralty which does not carry with it the marking with the letters "B.C."?—Yes, the marking can only be effected by the sentence of a court-martial.

3961. (*Lt.-Gen. Scarlett.*) Have not a considerable number of marines been discharged without the mark?—Yes, but there are very few now. It was complained of by the Horse Guards, and the Admiralty are more particular now and there are very few such cases.

3962. (*Chairman.*) Is the system of rewards the same in the marines a in the army?—The good-

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conduct pay and good-conduct badges are awarded, under nearly the same regulations, but there is a considerable difference in regard to medals and gratuities. A marine has to serve 21 years before he can become entitled to a medal and gratuity, whereas a soldier can get it in 18 years, and that is considered rather a grievance by the marines.

3963. What is the difference of pay?—The pay is the same. It was raised the other day in the same proportion as the pay in the army.

3964. (*Lt.-Gen. Eyre.*) In a case of insubordination with violence on the part of a seaman on board ship what would be the probable resort of the commanding officer in dealing summarily with them?—Corporal punishment.

3965. And next to that?—Imprisonment.

3966. In irons?—Imprisonment in a gaol. If it was in the Mediterranean he would be sent to Malta; if it was at Halifax he would be sent to the gaol at Halifax. On the home station he would be sent either to Lewes or to the nearest civil gaol.

3967. (*Lieut.-Gen. Scarlett.*) If it were at sea how would he be dealt with?—At sea he would be flogged, I suppose.

3968. (*Lieut.-Gen. Eyre.*) Are they not put in irons?—Yes, sometimes; but it is more for security, I think, than for punishment.

3969. (*Chairman.*) Have you any further suggestions to make with regard to courts-martial?—I have here some statistics as to numbers and per-centages, extending over a period of five years. (*The witness delivered in a statement.*)

3970. Have you any suggestions to make with regard to the appointment of Deputy Judge Advocates?—I should like to see more officers appointed than there are at present. There are only three in the army, I believe.

3971. Do you think that more ought to be appointed?—I think more ought to be appointed. I think that they are of the greatest use, and that they have done very great service towards improving the practice of courts-martial.

3972. Has that been the case in the marine service under your own observation?—We have at present one officer, who has qualified himself; he has been called to the bar. He has received no positive appointment yet, but he officiates at all general courts-martial, and has done so for some months past.

3973. From the amount of experience which you have had of his services, are you inclined to recommend that the same rule should apply in the army?—I think the appointment of this officer is one of the best things which has been done for a very long time for the administration of military law, and I look upon it as a great point gained in the right direction.

3974. Has he attended many courts-martial since his appointment?—Seven or eight. He is now attending one at Portsmouth.

3975. (*Lt.-Gen. Eyre.*) Do you not think that he, being a military officer, his appointment would be more acceptable to the service than a civilian being appointed?—I think it would.

3976. (*Lt.-Gen. Scarlett.*) Has he practised before a civil court?—No, he has gone through a course of study and reading, and has been regularly called to the bar.

3977. (*Chairman.*) You suggest, I understand, that the Deputy Judge Advocates should not be under the rank of lieutenant-colonel?—I certainly think they should not be.

Adjourned to Monday next at 12 o'clock.

Room E. House of Lords.

Monday, 25th May 1868.

PRESENT:

COLONEL THE RIGHT HON. J. WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEIGH.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER.
CAPTAIN THE HON. J. C. W. VIVIAN.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

G. Clifton, Esq.

25 May 1868.

GEORGE CLIFTON, ESQ., called in and examined.

3978. (*Chairman.*) You are the governor of the Portland convict prison, are you not?—I am.

3979. How long have you held that office?—Nearly three years.

3980. Have you held a commission in the army?—No, I have been in the navy.

3981. What rank did you hold in the navy?—I only reached the rank of midshipman, having received an injury at the siege of Acre which compelled me to retire from the service.

3982. Since that time how have you been engaged?—Since the year 1851 I have been employed in the convict service. I was deputy governor and acting governor or superintendent of the convict establishment in Western Australia for nine months in the year 1853, and after that I was one of the visiting magistrates to the same for nearly 10 years. Since my return to England I have been deputy governor of Portland prison, governor of Dartmoor for 12 months, and nearly three years governor of Portland prison.

3983. In the course of that time have you had many military convicts under your care?—Not a large number, but I have had a few; on an average between 30 and 35 at a time. At the present moment I have 30 at Portland.

3984. Are they committed to you by sentence of courts-martial, or have you any other authority to receive them?—Twenty-five of them are committed by sentence of courts-martial, and the others have been tried at sessions at Winchester and elsewhere.

3985. Is that about the average number which you generally have at Portland?—About that number. I have sometimes had a few more and sometimes a few less. There are at the present moment 10 men in addition to those who have been soldiers, but who are now under sentences of penal servitude for other offences. I have had a return prepared with a view of showing each of the different prisons at which they have been, their sentence, and the history of each individual man.

3986. Are those all military prisoners?—Those are all military prisoners.

3987. Are you in the habit of treating the military convicts in the same way as the civil convicts?—Exactly, they are punished in every particular and treated in exactly the same way as ordinary convicts.

3988. What is the longest punishment to a military

convict?—Penal servitude for life; for instance, the two men who were tried at Dublin, and shown on this return.

3989. Are those by sentence at court-martial?—By the sentence of court-martial. They are not Fenians; they are military prisoners, and treated as already described.

3990. They are soldiers who were convicted while in the service of Her Majesty?—While in the service of Her Majesty.

3991. Will you describe the punishments which you inflict in Portland prison, taking, first of all, penal servitude?—The punishments are the same throughout all the different prisons. There are a great variety of them. A prisoner sentenced to penal servitude is placed under the mark system on reception into a convict prison. The minimum number he can earn daily being six, and the maximum eight; for instance a four years man first does nine months' solitary confinement in one of the close prisons, he is then removed to a public works prison, where he has three years and three months to do. If by industry and exemplary conduct he is able to earn eight marks every day, he gains a remission of a quarter of the above period, and is liberated at the end of three years and about nine weeks. If he only earn seven marks he can only gain a remission of one-eighth of his sentence. If a prisoner commits a trifling offence I should inflict a forfeiture of 42 marks, which would detain him seven days longer in prison, but by industry and good conduct he might gain back a fourth of this period. If he forfeits 84 marks, the maximum number in my power to award, he would be detained double the time. There are four different classes, and a prisoner must earn a certain number in each, which entitle him to certain prison privileges, such as more frequent visits, opportunities of writing to his friends once in four, three, and two months, instead of six. He is also eligible for employment in the industrial portion of the prison, for which only exemplary characters are selected. In addition to the above forfeiture of marks the governor has the power to award three days' bread and water, in light or dark cells, and 25 days' penal class diet. If reported for idleness he has the power of depriving him of his mattress while on bread and water.

3992. Do you do that often?—In cases of insubordination I generally award dark cells, as I have found from experience that it does more to tame a man than anything else, from the very fact of his being kept in perfect solitude and in the dark. It is very severe punishment for this reason, that all prisoners undergoing this punishment are visited every hour during the day and night to see that they do not commit suicide, as we are responsible for their safe custody, and if a prisoner committed suicide, the public might turn round on the authorities and complain that proper supervision was not exercised.

3993. Supposing a soldier is committed to your charge for one year, how much of that can he get off?—We never received a man for less than three years, and now the minimum is five years. At Chatham, I believe, the court-martial men are still sent for a three years' sentence.

3994. You appear to be of opinion that the severest punishment which you can inflict on a prisoner is solitary confinement?—Solitary confinement in a dark cell is the severest punishment, with the exception of corporal punishment.

3995. (*Capt. Vivian.*) Is that accompanied with bread and water diet?—That is always accompanied with bread and water diet.

3996. (*Chairman.*) During the whole time that the man is in the dark cell is he kept on bread and water?—The maximum number of hours that he can be kept there by sentence of the governor is 72 hours or three days; but the director of the prison, who has the power of a magistrate, can, I believe, inflict 28 days bread and water in a dark cell.

3997. Can you deprive him of his bed?—If he is reported for idleness, it is an order from the Secretary of State that he be deprived of his bed.

3998. Do you keep him without his bed for three days?—Occasionally, but it is very seldom that he is kept without his bed as long as that. Generally for idleness one day without his bed is quite a sufficient punishment, and that subject to the medical officer's approval.

3999. Do you think that the prisoners look upon it as a boon to get to penal servitude out of doors?—Certainly not in these days.

4000. You do not think that a soldier sentenced to solitary confinement would think it a boon to have that changed to common penal servitude?—I think not.

4001. (*Capt. Vivian.*) That would depend, I suppose, upon the way in which that out of doors punishment was carried out?—It depends upon the way in which it is carried out.

4002. (*Chairman.*) What is the nature of the punishment which you inflict out of doors?—Compelling them to work hard at all sorts of manual labour, such as dressing stone, excavating, and loading trucks, &c. They are employed in every description of trade; they are instructed under prison instructors, so as to give a man the opportunity during the time he is imprisoned of learning as far as possible some trade which may enable him hereafter to earn a livelihood.

4003. In what respect does stone cutting and work of that kind differ from stone cutting out of a prison, except that the man is not paid for it, does he work in chains, for instance?—He does not.

4004. Then in what does it differ?—They are continuously kept under strict discipline, marched backwards and forwards to labour, and not allowed to converse with each other; they work eight and ten hours per diem. The time spent in the prison, between returning from labour and bed time is more monotonous. The prisoners rise every morning at 5 o'clock, they have their cells to clean and are then marched to chapel. Of an evening they receive tuition from the schoolmaster; they are not allowed to have their beds down, or to converse with each other during the time when they are in the cells. They look upon being locked up in their cells as punishment. Being kept from their companions, and not allowed to talk while they are at work is one of the greatest punishments. When they are out of doors they are simply permitted to ask questions about the work, but if they hold any familiar conversation they are reported and punished.

4005. (*Lt.-Gen. Eyre.*) Do the men who have attempted to escape work in chains?—Those who have either committed an assault on an officer or have attempted to effect an escape are put in chains by the director for a period of three or six months.

4006. (*Chairman.*) For a common case of insubordination attended with atrocity what punishment do you inflict?—I should give the man three days bread and water in the dark cells, forfeit 720 marks from his class, that is to say, if he was in the first class he would be put into the second class for three months; and in addition to that he would forfeit 84 marks of his remission of time, which would be taking away 14 days of his remission.

4007. Are you ever obliged to inflict corporal punishment?—Occasionally we have aggravated cases of assault upon officers, and in that case men are always flogged.

4008. What is the number of lashes that you can give?—Thirty-six lashes with a naval cat in the naval fashion.

4009. Have you reason to believe that you could do without corporal punishment?—I think if you were to abolish corporal punishment in a prison of the magnitude of the Portland the lives of the officers would be placed in jeopardy. I believe it is the thing which deters prisoners more than anything else from committing assaults upon officers.

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4010. In case of an assault how do you proceed to inflict corporal punishment?—The officer who witnessed the assault is examined in the presence of the prisoner, who has an opportunity of cross-questioning him and of making his defence. I take down the whole in writing. The particulars are then submitted on a proper form to the director in London, who at his next visit tries the prisoner, retaking the evidence against him on oath, and awards corporal punishment if the prisoner is found guilty.

4011. Then you have not yourself the power of inflicting corporal punishment?—I have not, for if the governor had the power it might give rise to feelings of revenge.

4012. How long does it take to have this reference to the proper authority?—In an urgent case I have known a director come down within a few hours; if it were not an urgent case it may stand over for a fortnight, and in the meantime the man is put upon light labour diet and kept in a separate cell.

4013. Supposing a law should be passed to abolish corporal punishment in your department, what is the punishment which you yourself would suggest in its place as the most efficacious for preserving discipline for a certain period?—The only one which I can think of in that case would be punishment in dark cells, with penal class diet for a period of nine months, which a director has the power to award.

4014. Would the minds of many men stand that?—They do stand it.

4015. Are there many instances of it?—There are no instances at Portland, I think, where the whole nine months have ever been passed by a prisoner in the penal class, but in the close prisons in London, before they are sent on to the public works, men undergo nine months' solitary confinement.

4016. What is the longest period of solitary confinement which you have heard has been inflicted?—I cannot, without reference, tell you the exact number of days; 180 days is what the director generally gives in cases of assaults, but if the man's conduct is exemplary he will remit a portion of that sentence.

4017. There are two kinds of solitary confinement, I believe, the one being separate confinement and the other being solitary confinement in a cell?—Yes, they are quite different. There is a prison set apart for the governor's punishments and another for the director's punishments. Both of them are in cells, but owing to the lengthened period of solitude that a prisoner may be detained by a director's order, the cells in that prison are much larger and very well ventilated. The director might give a man 28 days' punishment diet to commence with; that would be bread and water for three days, and on every fourth day penal class diet, which is porridge and potatoes and a certain allowance of bread. The penal class diet is continuous after he has once passed through the punishment diet if his conduct is bad, but if good at the expiration of three months he is placed on light labour diet.

4018. When men are committed to your charge by sentences of courts-martial you award the same punishment, I presume, in all cases?—Exactly the same. We know no distinction.

4019. When is it that you first make the distinction in the punishment?—There is no distinction throughout the whole of the sentence. A man is liable to the same punishment in the first class as he was in the probationary class if he commits himself.

4020. Is there no alteration in the nature of the punishment for good conduct?—No. Of course, one always takes into consideration a man's good conduct in inflicting punishment; but still there is the power of inflicting the same punishment.

4021. But the punishment under the sentence is throughout the same in every respect, except that a man by good conduct can shorten his period of punishment?—Yes.

4022. Have you the power of shortening the punishment of a military prisoner?—The whole of the prisoners sentenced to penal servitude come under a set of regulations promulgated by the Secretary of State. We have nothing to do with remission farther than working up the marks upon which it is calculated. Two months before a prisoner has earned his full number of marks to entitle him to be discharged upon licence, his name is submitted to the directors and goes from them to the Secretary of State's office, but it rests with the Secretary of State whether he will liberate him at the time of the expiration of his earning his marks, or whether he thinks it desirable to keep him longer. It is entirely dependent upon the conduct of the man.

4023. The civil magistrate then has no authority whatever in the remission of military punishment?—No magistrate has any power within the walls of a convict prison. The Secretary of State alone grants remission through the directors of convict prisons.

4024. Is there any punishment that you could suggest to the Commission for military prisoners besides those which you inflict in Portland prison which you think would tend to facilitate the maintenance of discipline?—I do not think there is any but the punishment of dark cells. I think that in all cases of insubordinate military prisoners punishment in the dark cells would be the more effectual.

4025. Have you no shot drill?—We have no shot drill. I think that punishment of this description tends to irritate without producing any reformation.

4026. Are you opposed to shot drill altogether?—I think so.

4027. In the generality of cases, should you say that the length of punishment is shortened by good conduct in prison?—Very considerably.

4028. Will you give the Commission an instance in which the largest remission of punishment has taken place in those cases which you have before you?—There are some of the men referred to in the return I produce that have never received any punishment whatever. There is a man, Charles Wentworth, clerk, serjeant of the 17th infantry. He was sentenced for embezzlement, and by sentence of court-martial got five years penal servitude. That man has passed through the whole of his career at Millbank and at Pentonville, where he had his nine months solitude; and he has now come to Portland prison. Since his arrival there his conduct has been exemplary in every respect. He is respectful, industrious, and well conducted, and that man will earn the maximum amount of remission, I have not the least doubt; so that upon his five years sentence he will earn one year and one month remission, so that he will be discharged at the expiration of three years and eleven months.

4029. Did he begin to get advantage from his good conduct before he came to you?—No, he got no advantage until he came to Portland, because he did nine months in solitude, during which time he gained no remission and he must earn 720 marks to complete his year in the probation class on the public works. He must do the whole of the first nine months without earning any remission, and then he commences his career as a public works' prisoner, and if he earns eight every day he gets the full remission. Another advantage attending the marks is, that in each class, except the probation, they have a money value, and a man by industry is earning for himself a gratuity which is paid to him on his discharge from prison. The maximum amount that he can earn is 3*l.*; but if he is a long-sentence man, the last year of his sentence can be worked out in what is called the special class. He can only get into that class provided his conduct has been exemplary through the first class, and then I have the power of recommending him to the directors for an additional gratuity of 3*l.* and a week's extra remission. Here is a man, for instance, who is sentenced for striking a superior officer, and who is under a seven years' penal servitude sentence, and there is one for a civil offence. That man has never earned a single day's remission; he will do the whole of his sentence. He has been bad at Calcutta; he has been bad at Millbank in solitude;

and he has been very bad at Portland. That man will have to do the whole seven years, and when he goes out he will have no gratuity, but will be entirely dependent upon the bounty of the director, who will have power to award him a certain sum for subsistence for a few days to prevent his getting into trouble again at once.

4030. Supposing a greater number of soldiers were committed by sentences of courts-martial to Portland prison, how many do you think you could take in there?—It depends upon the number of vacant cells. Sometimes we could take in 100 at a time.

4031. Are you pretty full on an average?—We have been very full lately. We have 1,571 now.

4032. (*Capt. Vivian.*) You will go on increasing, will you not, now that they do not send them out of the country?—I do not think that the number of prisoners is increasing but in order to keep up the works the prison is maintained at its full strength. It is not that the number of convicts has increased.

4033. But they do not send any convicts abroad now, do they?—They do not, except to Gibraltar.

4034. Will not that tend to increase the number that you have at Portland?—I think it will always enable the director to keep up the full strength.

4035. (*Chairman.*) Do you think, from the experience of past years, that the prison at Portland is capable of being much extended for the purpose of military punishment, the sentences being the same as you have now?—I think there would be no difficulty in the matter.

4036. (*Capt. Vivian.*) Do you think it is a good thing to keep military prisoners in direct association with convicts of a bad class, such as those you have at Portland? — Certainly not, if the soldiers are ever to return to the army. I think that a man like this man Wentworth, or a great number on this sheet, become contaminated from associating with criminals, and that it acts injuriously when they are released from imprisonment. This is a man who will evidently go through the whole of his sentence without any trouble, and will be desirous of commencing the world afresh; but he will suffer from being recognized by released convicts, and reminded that he was once one with them.

4037 (*Chairman.*) Will you state what are the crimes on that paper before you?—Striking a superior officer, desertion, arson, desertion, striking a superior officer and using insubordinate language, striking a superior officer, embezzlement, desertion and making away with great coat, stealing, theft, allowing a private to attempt to commit an unnatural crime, insubordination, stealing, insubordination, desertion and violently resisting his lawful apprehension by firing a loaded rifle, gross insubordination, assault, uttering counterfeit coin, assaulting a superior officer, insubordinate and threatening language, obedience of orders, striking a superior officer, and so on.

4038. They are chiefly offences against military discipline?—Yes; I think with regard to military convicts, where the sentence is awarded for a breach of discipline, that if those men were kept separately, it would be advantageous to them, and that there would be much more hope of reforming them. With regard to arson and stealing, and such crimes, I see no possible reason why they should not be treated in the same manner as other felons.

4039. (*Capt. Vivian.*) But your general opinion is that for men who are to return to the ranks in the army it is better to keep them distinct and separate from civil convicts?—Most decidedly. I have 30 military convicts in Portland now, and 10 others who were formerly soldiers undergoing punishment in the prison at the present time, who have been discharged from the service. In that list there are 16 men with excellent characters for industry and good conduct, that is, more than half of the whole number.

4040. (*Chairman.*) Are all those 16 men sentenced for strictly military offences?—They are all for military offences.

4041. (*Capt. Vivian.*) Are those men sent back to the army when they leave you?—Not if the sentence of the court-martial is over three years. I think that is the maximum time. It has twice occurred that a demand has been made from a commanding officer of a regiment to give up a prisoner at the expiration of his sentence; but in each of those cases, it was not the sentence of a court-martial, and he was held as an ordinary prisoner, and it was not known to me that he was a military man; therefore he was discharged without any communication made with the commanding officer or with the Horse Guards through the directors.

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4042. (*Chairman.*) But if a soldier is committed to your charge by sentence of court-martial, at the end of his period I presume you inform the commanding officer?—Not if it is over a certain length of time, because they are then never reclaimed.

4043. (*Capt. Vivian.*) A sentence above three years virtually dismisses a man from the army?—I believe so.

4044. (*Lieut.-Gen. Scarlett.*) Was it not the case formerly that a man was always dismissed from the army if he was committed for penal servitude?—Formerly a man was always dismissed the army if he was committed for penal servitude.

4045. But subsequently to that, to prevent men committing crimes for the sake of getting penal servitude, the Commander-in-Chief, and the Adjutant-General, I believe, kept it in their own hands as to whether a man should be dismissed, or not; and, therefore, the man was considered as belonging to the army until the time of his dismissal; was that not so?—I believe that was the case. Military sentences are brought forward in the ordinary manner before the director two months before the sentence expires or before the man has earned his remission, and it rests with him to communicate with the War Office as to whether he should be sent back to his regiment.

4046. (*Chairman.*) But there is the power to discharge the man altogether, is there not, without referring him back in any way to his regiment?—I believe so, if his sentence exceeds a certain number of years. There is no rule to the contrary that I am in possession of. It is constantly done with men who have 10 years. They are treated as other prisoners and are discharged when they become entitled to it.

4047. There is no obligation upon you during a man's confinement under sentence to report him either to the Horse Guards or to the Secretary of State?—Not long-sentence men. It was when there were court-martial sentences of only three years, and when a man could by six months' remission go out in two years and six months; then he would have been eligible to go back to his regiment, but in long sentences it is not obligatory upon me to report the circumstance.

4048. Do they inform you when a soldier comes in how many years service he has in the army?—Generally the court-martial papers and others accompany the caption, and one knows how long the man has been in the army.

4049. But supposing that a man has engaged to serve for 10 years and that under the sentence of a court-martial in his second year of service he is put into your charge for penal servitude, should you feel yourself justified in dismissing him before his period of 10 years is over?—I should have no power to liberate him until he had earned his marks. The sentence is turned into marks, and until he had earned his full number of marks he cannot be liberated, and then it must again be brought under the notice of the Secretary of State before he can be liberated, because it is only under the sign manual of the Secretary of State that he can be discharged.

4050. But supposing a man works out no advantages during five years, and that his period of punishment ends in the seventh year of his service under the Queen, would you hold yourself justified in letting

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him go at large and not sending him back to his regiment?—That would rest with the directors; it would not rest with me, I should bring it under the notice of the directors.

4051. You are not aware, whether or not that power exists?—I am not.

4052. (*Lieut.-Gen. Peel.*) Are all the prisoners at Portland under sentence of penal servitude?—They are all under penal servitude, at least when I say all there may be some few who are still under the old Transportation Act, and who have not yet completed their sentence, men who had 20 years for instance to do, and who were serving before the Penal Servitude Act came into operation.

4053. But men sentenced merely to imprisonment are never sent there?—Never.

4054. Do you ever employ any of the prisoners at Portland in places of authority over the other prisoners?—Never. The only thing that a good man would be eligible for would be inside berths, such as in the kitchen or in the bakehouse, or amongst the cleaners' party, or berths of that description, where you want men of trust who will not go into another man's cell and touch his things.

4055. Sometimes you have men of a superior class in life; have you not?—Yes.

4056. (*Lieut.-Gen. Scarlett.*) Do you employ them in plan drawing?—Under no circumstances is any prisoner allowed pen, ink, and paper, except at school time, when under the inspection of disciplined officers.

4057. Is he never employed in prison under supervision for the purpose of plan drawing?—Never. It is strictly against the Secretary of State's orders that he should ever be employed for writing purposes.

4058. Is that a late thing?—Within the last few years.

4059. (*Lt.-Gen. Peel.*) Do you consider that the punishment which a man undergoes at Portland is equal to that which he would suffer if it was merely an ordinary imprisonment in another place?—I think that it is more severe.

4060. And therefore if the law is carried into effect of not sending men committed to penal servitude out of the country, there would be no object in a man who was sentenced to imprisonment committing a crime in order to be sentenced to penal servitude?—I do not think so. The proof of it is this; that in days gone by when prisoners were liberated they very soon came back to prison, whereas the diminution of re-convictions is very great since the introduction of the Penal Servitude Act. None have been sent to Western Australia for some time, and the last were sent to Gibraltar about a month ago.

4061. Do you know the nature of the punishments at Gibraltar?—I do not, but I believe they are the same as in operation here.

4062. (*Lt.-Gen. Eyre.*) In some armies in violent cases requiring prompt and summary dealing they have what they call short chains, which means, in reality, chaining a man hand and feet together for six hours, and not longer; as a practical man how would you view that kind of punishment?—I think in all those cases it rather has a tendency to irritate men without producing any permanent and good effect upon them.

4063. It is, in your opinion, no improvement upon what you can carry out yourself at present?—In the event of a man being violent I can put him in handcuffs for a few hours just to restrain him, and very often the man will thank me afterwards. When the fit of temper has passed off he will express his regret; but I think as a general rule any length of time in irons or chains only frets or irritates a man.

4064. What you propose answers the purpose just as well?—Just as well; merely restraining and preventing him from committing himself at the time is all that is necessary.

4065. (*Mr. Headlam.*) You have found the dark cells most effective, have you not?—I think so. Nothing in my opinion is so taming as the dark cells.

4066. (*Capt. Vivian.*) And bread and water diet?—And bread and water diet.

4067. (*Mr. Headlam.*) Have you ever known any man suffer permanent injury from the dark cells in mind or otherwise?—I do not think so; but they are constantly visited by officers, and in the event of their being in the slightest degree ill they are visited by the medical officer, who would recommend their being liberated if he saw the slightest ground for it.

4068. (*Chairman.*) Does a medical officer visit the prisoners in the dark cells?—Every day he sees the prisoners in all the punishment cells, and if he remarks that any man is suffering he notifies the fact to me in writing, and that man is immediately liberated and returns to his ordinary work.

4069. (*Mr. Headlam.*) Have you ever known them attempt to commit suicide?—Not in the dark cells. We have had several cases of attempts to commit suicide during the past year, but I think more with a view to intimidation, and with a hope of getting into the hospital than anything else.

4070. They were not in reality true attempts?—No, they were feigned attempts, I think. We had last year 13 attempts altogether; eight were feigned and five were real. Two men did commit suicide; one man was a soldier and a man who had been in the army throughout the whole of his career noted for his violence. He would lose his temper and become violent and make use of the most threatening language; he commited suicide in a fit of temper by throwing himself over the rails. He was confined for stealing.

4071. You stated with regard to corporal punishment that you thought that if it was done away with the lives of the governor and the officers would scarcely be safe; do you think that corporal punishment is valuable with reference to the man himself, or with reference to the effect which it produces upon others?—Both: I think that the bodily pain deters some men from committing a second assault, and it also deters others from following their example. I find that when corporal punishment has been inflicted for assault in the prison everything will go on quietly for weeks afterwards. Sometimes a man gets cut down by an officer with his sword; he is justified in using the sword in self-defence.

4072. (*Capt. Vivian.*) What force have you to keep those 1,500 prisoners?—A civil guard of 40 men, and a superintendent and two serjeants.

4073. (*Lt.-Gen. Scarlett.*) Is not a regiment, or part of a regiment, quartered at Verne Hill?—There is the head-quarters of a regiment there with about 300 men. We have the Snider rifle and buck shot, and cartridges of nine shot. I think that during the past year the returns I have sent to the directors show that the punishments were one half per cent. per diem, and that there were about 1,000 men in the prison who have scarcely ever had a report against them.

4074. (*Mr. Headlam.*) What length of service should you say is the most effective for the reclamation of men?—I think that if a man is not reclaimed after a punishment of three or four years in a penal establishment there is very little chance of his ever being so.

4075. Do you think a penal servitude of as much as three or four years has a reclamatory effect?—Three years, I think has.

4076. What is the effect of a punishment for, say, one year?—I do not think that prisoners would dread it much.

4077. Do you think that however sharp you made the punishment during a single year it would not be sufficient?—No; I think that I have observed that the seven years' men dread the punishment much more than the five years' men.

4078. With respect to a man who has gone through a punishment for three years, do you think that you have fair ground for supposing that if he be subjected to temptation in after life he will conduct himself

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well?—A great many of them do, but there are a very great many exceptions.

4079. Do you think that there is a better chance of a man's behaving well in after life, say, after a punishment of three years, rather than after a punishment of a shorter duration?—I think so. The leader of the mutiny at Portland a few years ago had been a soldier. He was a man who had committed assaults upon his officers, and had been violent in prison. I thought I saw through the man's character and could handle him, and in the middle of the mutiny he and three others threatening to knock my brains out. However, I touched a chord in the man's heart, and in the height of the mutiny he and his companions walked with me through the whole of the men up to the prison; he said: "I hope you will do something "for me, sir." I held out no hope of his not being punished, but I said, "If after you have been punished "you will turn over a new leaf, and I can assist you "in any way, I shall be glad to do so." That man was never reported afterwards, and he has gone out now and is doing very well. He said, "You are the "first person, sir, that ever spoke to me quietly and "pointed out the errors of my ways. I have been "sworn at and irritated, but you held out some little "hope to me, and I saw a ray of hope." I have heard of him since he has been out, and he is a useful member of society, and a very quiet and well conducted man, but he was the dread of everybody in the prison.

4080. Would it not be dangerous to have the military convicts mixed up with the other prisoners?—I think not; but undesirable if they are to return to the army. They are under strict discipline and easily controlled.

4081. (*Capt. Vivian.*) Are you all on the silent system at Portland?—Yes, as far as it is possible to maintain silence. They are not allowed to talk in their cells, or on the public works, but while they are actually at labour they may ask for tools, &c. Perfect silence is maintained on parades, &c.

4082. But still they do manage to communicate with one another, do they not?—They do communicate occasionally with one another by signals.

The witness withdrew.

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The Right Honourable John Robert Mowbray, a member of the Commission, examined.

4083. (*Chairman.*) How long have you held the office of Judge Advocate-General?—From March 1858 to June 1859, and from July 1866 to the present time.

4084. During the time that you have filled that office have you formed any opinion with regard to the nature of the laws and the customs of the army on which courts-martial have to form their judgments?—With respect to the custom of the army, of course my opinion can be but derived from a limited knowledge. With respect to military law I have a very decided opinion that it is in a very confused, uncertain, and conflicting state. The volume which I hold in my hand, and which is transmitted annually to each regiment, I believe, by direction of the Secretary of State for War contains the Mutiny Act and seven other Acts of Parliament, and also the Articles of War; but in addition to that the military law is to be found in the Queen's Regulations and in the War Office Regulations; and I have continually occasion to refer in connexion with courts-martial to sundry Royal Warrants with reference to pay and promotion. Now I find that in the Queen's Regulations it is stated that it is incumbent upon all officers to apply themselves diligently to the acquirement of a competent knowledge of military law, and of the orders and regulations founded thereon; but I consider that this is a very difficult task which is imposed upon officers when they are to become members of courts-martial, because I think that military law is in a condition which is perplexing even to lawyers, and I should be afraid that it must often be utterly unintelligible to soldiers.

4085. Can you give any instances where this difficulty specially arises?—I should say that it arises partly from the want of any sort of arrangement or any correspondence in the various parts between the Mutiny Act and the Articles of War. You do not find the same provision or provisions intended to have the same effect in the corresponding parts of the Mutiny Act and the Articles of War, the truth being that the Mutiny Act, I believe, requires to be rewritten. It has been renewed annually from the time when the first Mutiny Act was passed in the year 1689 to the present day; but it has never been redrawn, though it has been annually, I may say, patched and tinkered as occasion required.

4086. Can you show us any prominent instance of the difficulty which you have now suggested?—I do not think that I could show any prominent instance, because I think that it would be a great reflection upon the office which I hold if there were any glaring anomalies or any direct contradictions. No doubt there are various details in which I might show that they are conflicting, but as it is the custom to mend a hole as it arises each year, there is nothing that I would say is very glaring. I could give a number of instances, but I think it would rather tend to perplex the Commission than to enlighten them. What I think is that the Mutiny Act requires to be redrawn in a comprehensive spirit by some one possessing a full knowledge of military law as it exists at present. Now my view, which would maintain both the theory and the practice of the constitution with respect to the existence of a standing army, would be this: that the Mutiny Act should be an annual Act, as it is at present, and that it should be required to be renewed from year to year. I would also have the Articles of War promulgated as they are at present once a year, and I see no reason whatever why, as has been sometimes desired, they should not, as soon as they have been promulgated by the authority of the Crown, be laid upon the table of each House of Parliament. In that way the Mutiny Act would become much simpler. In the first place it would authorize, as it does at present, the number of men to be raised from year to year, and then I think the Mutiny Act would be in two parts, one part being much more in detail and the other part being more general. First of all, I would have the Mutiny Act provide in detail for what I should term the municipal relations of the army; that is to say, there would be provisions for the process of converting a citizen into a soldier by enlistment and attestation, and so forth; and then there would be provisions in detail as to the relations of citizens to the army in respect of billets and the duty of justices and gaolers, and so forth. Then as regards military law I would have it more general. I would authorize, by the Mutiny Act, the creation by the Crown of a military code for the maintenance of the discipline of the army, subject to such restrictions and limitations as Parliament might think fit to impose; and of course among those restrictions there would be, as there is at present, a limitation of the term of imprisonment, and regulations as to cases of death and penal servitude, and so forth. Then the Articles of War being issued under the authority of the Mutiny Act, they should provide in detail for trials by courts-martial, and they would be, as I believe they are practically at present, the code to which all officers would recur upon trials by court-martial. I do not think that you could do away with the Articles of War altogether. I believe that some persons have been of opinion that you might simply have a Mutiny Act, but I think it would be absolutely necessary to retain the Articles of War. First of all because experience showed that it was necessary to have them; for the first 28 years, from 1689 to 1717, there was a Mutiny Act alone, without Articles of War; and it was then

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found necessary to give the Crown power to make Articles of War. In fact I look upon the Articles of War, proceeding from the Crown and being framed under the authority of the Mutiny Act, as corresponding very much to what is now becoming so common, namely, the Orders in Council, which you find, for instance, with respect to the cattle plague and the proceedings of the Ecclesiastical Commissioners. There are a number of cases in which general powers are given to the Crown and are carried out in detail by Orders in Council. So I would have the Crown carry out in detail by the Articles of War the powers conferred on it by the Mutiny Act. The Articles of War are necessarily more elastic than the Mutiny Act, and from time to time it is very convenient to provide for a number of cases which it is not necessary to put into an Act of Parliament. For instance, before this year trials by court-martial were to be held between eight o'clock in the morning and four o'clock in the afternoon. It is obviously very inconvenient sometimes that a trial should be broken off at four o'clock in the afternoon, because a witness may perhaps be under cross-examination who is a prevaricating witness, and he is stopped in the middle of cross-examination, and before the next day he has had an opportunity of getting up some false story to corroborate what he said the day before. I have therefore provided this year in the Articles of War that "if the court considers it necessary, they may "continue any trial beyond the hour of four in the "afternoon, recording in the proceedings their reason "for so doing." Then there is another provision in the Articles of War this year, which I thought it important to put in, which arose out of the Jamaica case. A great deal turned in the Jamaica case, where the officers on that trial were charged with murder, upon the view of the spot, and I suggested that the court should go to the spot and view it; but that was a thing of which there had been no instance before, and for which there was no provision in the Articles of War. I mention those two cases, though I might mention many other similar illustrations of the convenience of putting those things from time to time in the Articles of War without their being tied up in an Act of Parliament.

4087. Supposing that the court had not complied with your direction to visit the spot, would that have vitiated the court?—I am not prepared to say that it would, but I gave my suggestion to the Judge Advocate, who proceeded from England, and he took care that it was followed out.

4088. But where does that order appear now?—That order would not appear anywhere.

4089. But you look upon it as equally valid as an Article of War?—No. It was a suggestion which I gave to the Judge Advocate who proceeded to Jamaica as my representative to see that it was done, and I did not contemplate the possibility of any court refusing to take the step so suggested.

4090. (*Lt.-Gen. Peel.*) Do you mean to say that the court had not the power of going to view the spot without directions from you?—I do not say that they had not the power, but I suggested the expediency of their doing so.

4091. Do you attribute the number of revisions of courts-martial in any way to the confusion which you have just described?—I do not know that I attribute the revisions to this. The revision sometimes turns upon the view taken as to the facts, and sometimes upon the law. It is difficult to say what a revision turns upon.

4092. But do you think that it is the inability of courts-martial to comprehend the bearing of the Articles of War, the Mutiny Act, the Queen's Regulations, and the War Office Regulations, which sometimes leads to the necessity of a revision of a court-martial?—I think, as I have said before, that there are so many Acts of Parliament, and there are the Articles of War, and there are the Queen's Regulations and the War Office Regulations, and so many Royal Warrants to be considered from time to time, that it is very difficult indeed, even for a lawyer, to arrive at a precise view of what the law is. I always hold that the Act of Parliament is supreme, but it may often be puzzling to a soldier. If there is any amount of conflict between an Act of Parliament and the Articles of War or the Queen's Regulations, he perhaps does not see the superior authority of the Act of Parliament.

4093. Could you give the Commission any evidence as to the instances in which those difficulties to which you have just now alluded have occurred in the findings of courts-martial?—Something like 8,000 general and district courts-martial pass in the year through the office, and points arise upon them from day to day of all kinds.

4094. Are you speaking of both regimental, district, and general courts-martial?—I am not speaking now of regimental courts-martial. I am excluding regimental courts-martial. I have a list here, which I will hand in, of the total number of courts-martial which have passed through the office since the year 1829.

The witness delivered in the following table:—

Year.	District Courts-Martial.	General Courts-Martial.		Total.
	District.	Home.	Abroad.	
1829	805	107	119	1,031
1830	1,904	92	198	2,194
1831	3,616	111	198	3,925
1832	4,928	150	291	5,369
1833	5,912	185	264	6,361
1834	6,187	162	357	6,706
1835	5,939	172	316	6,427
1836	5,148	125	346	5,619
1837	5,955	116	305	6,376
1838	5,575	118	406	6,099
1839	5,269	114	391	5,774
1840	5,515	121	240	5,876
1841	5,406	87	260	5,753
1842	4,916	85	220	5,221
1843	4,835	84	223	5,142
1844	4,809	109	215	5,133
1845	4,703	81	201	4,985
1846	4,700	54	172	4,926
1847	5,603	101	285	5,989
1848	5,881	86	224	6,191
1849	5,262	110	169	5,541
1850	4,469	75	206	4,750
1851	3,788	54	158	4,000
1852	4,002	48	157	4,207
1853	4,172	45	129	4,346
1854	4,582	14	121	4,717
1855	8,978	12	159	9,149
1856	8,523	48	139	8,710
1857	6,115	42	214	6,371
1858	8,842	61	127	9,030
1859	8,645	75	129	8,844
1860	8,128	133	178	8,439
1861	7,837	100	211	8,148
1862	7,582	109	445	8,136
1863	7,582	102	295	7,979
1864	7,413	56	304	7,773
1865	7,492	28	175	7,695
1866	7,655	50	145	7,850
1867	7,295	46	218	7,559
1868 (Up to May.)	2,271	13	26	2,310

4095. Does that include India?—It excludes India.

4096. (*Lt.-Gen. Eyre.*) Have you the number of the average force?—No, that might be found from the Mutiny Act of each year. The paper which I have handed in contains from 1829 to 1867, both inclusive, the number of district courts-martial, the number of general courts-martial at home, and of general courts-martial abroad, and the total.

4097. (*Capt. Vivian.*) Have the general courts-martial increased or decreased in proportion to the other courts-martial?—In the last 10 years there have

been 760 general courts-martial held at home (the number abroad is larger), or an average of 76 a year. In the preceding 10 years, from 1848 to 1857, there were 534 general courts-martial, giving an average of 53 a year. If I take the last 20 years there has been an average of 64 general courts-martial held at home during each year; but in consequence of a general order in the year 1864, recommending that only the more important cases should be tried by general courts-martial, I think that there has rather been a tendency to diminish the number, and it is possible that the number in future may be below the average of 64. Taking the last three years for instance; in the year 1865 there were only 28; in 1866 there were 50; and in 1867 there were 46.

4098. But the offences which used formerly to be dealt with by general courts-martial are dealt with now by district courts-martial, are they not?—Some of them are.

4099. (*Chairman.*) Have you to mark your opinion upon those, or are they merely recorded in your office?—The course pursued is this: every general court-martial, as soon as it comes into my office, is perused by my deputy and by myself, and after that I have to submit it to Her Majesty for confirmation. In a case of acquittal, by a change which was effected in October 1866, soon after I came into office, as soon as I am satisfied of the propriety of the acquittal I transmit the proceedings to Her Majesty in a box, usually the same day, and I receive them back again from Her Majesty directly; and at the same time that I transmit them to Her Majesty I send the proceedings over to the Horse Guards, and inform the Commander-in-Chief of the advice which I am about to tender to Her Majesty; and when I receive Her Majesty's approval, I then communicate that approval to the Commander-in-Chief, so that there shall be no delay. In cases where I advise Her Majesty to confirm and approve convictions, then I obtain the approval of Her Majesty at a personal audience from time to time.

4100. (*Capt. Vivian.*) Then do you submit all courts-martial to Her Majesty, and not to the Commander-in-Chief?—I submit all general courts-martial to Her Majesty. With respect to general courts-martial abroad, for the most part they are confirmed abroad. Some of them at the more distant and smaller commands require confirmation by the Crown in cases of death, penal servitude, and cashiering, but the Commander-in-Chief in India and the Commander-in-Chief in China have very great powers, they can confirm all cases. With respect to district courts-martial, those at home are read by the District Judge Advocates, and my attention is called to any case in which there is in the proceedings anything irregular or deviating from the ordinary course of things. With respect to district courts-martial abroad, they are confirmed abroad and are sent home. They are then read either by my deputy or myself. Every district court-martial is read by some one connected with my office. My attention is called to anything which is irregular in any of them, and if the irregularity is such as to vitiate the proceedings I write to the General commanding abroad to set aside the whole proceeding, or to suggest a remission of the punishment, or whatever the case may appear to require.

4101. (*Lt.-Gen. Peel.*) With regard to cases of acquittal, you say when they come to you you forward them immediately to the Queen, but have they not to pass through the revising officer's hands before they come to you?—No; I am speaking of a general court-martial where the Queen is the confirming officer, acting upon the advice of the Judge Advocate-General.

4102. Not the Commander-in-Chief, or the commanding officer of the district?—The officer of the district has nothing to do with it. The Crown is subsequently advised by the Commander-in-Chief after receiving the advice of the Judge Advocate-General. The advice of the Judge Advocate-General, as I understand it, is as to the regularity of the proceedings in point of law. As to the advice of the Commander-in-Chief, His Royal Highness will probably himself be able to state upon what points his advice is tendered to Her Majesty. I apprehend that the advice of the Commander-in-Chief has reference to the fitness of the sentence with regard to the offence.

4103. Are there any instances in which you have recommended the reversal of the decision of a court in a case of acquittal?—I have never done so in a single instance, and I do not myself contemplate the probability of it. So strong is my opinion about the propriety of an acquittal being maintained, that I hardly contemplate the possibility of ever advising Her Majesty to reverse such a decision in the case of a general court-martial.

4104. Do you see any objection to a verdict of acquittal being at once pronounced by the court?—I see no objection to it whatever in the natural course of things, but it would be of course a deviation from the practice hitherto pursued of the matter being brought personally before the Sovereign.

4105. (*Capt. Vivian.*) You see no objection to the acquittal being pronounced at once?—I see no objection to it.

4106. Supposing that you require courts-martial to be certified by the Judge Advocate-General first of all in order that he may see that everything has been conducted according to military law?—I think it is desirable that it should pass through the Judge Advocate-General's office.

4107. (*Marquis of Hartington.*) You have touched upon the point, but would you state exactly what you consider to be the relative authority of the Articles of War as compared with the provisions of the Mutiny Act?—I consider that in any conflict between the Articles of War and the Mutiny Act the Mutiny Act, as being the law of the land enacted by Parliament, must be supreme. The Articles of War derive their authority from the first clause of the Mutiny Act, which provides that "It shall be lawful "for Her Majesty to make Articles of War for the "better government of Her Majesty's army," and then it provides, "that no person within the United "Kingdom of Great Britain and Ireland or within "the British Isles shall by such Articles of War be "subject to suffer any punishment extending to life "or limb, or to be kept in penal servitude, except for "crimes which are by this Act expressly made liable "to such punishments as aforesaid, or shall be subject, "with reference to any crimes made punishable by "this Act to be punished in any manner which shall "not accord with the provisions of this Act."

4108. If it should happen that the Articles of War and the Mutiny Act or any other Act of Parliament should conflict, you think the Act of Parliament should of course be supreme?—Clearly.

4109. But in cases where they do not conflict, do you consider that that provision of the Mutiny Act confers the force of law upon the Articles of War made by Her Majesty?—Yes, in cases where they do not conflict, certainly.

4110. (*Lt.-Gen. Eyre.*) Are not the Articles of War meant to illustrate the Mutiny Act?—They are intended to go into a detail into which the Act does not go. I have stated that I compare them to the Orders in Council which were issued during the time that the cattle plague raged in this country. We had Acts of Parliament passed, but those Acts of Parliament were worked out by means of Orders in Council; that is to say, you could not be altering an Act of Parliament in detail every week, but the Privy council could sit every week, or as often as might be required from day to day, and they could make new orders to meet the emergencies of the case. I apprehend that the Articles of War provide in detail for that which it is not desirable to tie up in an Act of Parliament.

4111. (*Lt.-Gen. Peel.*) Who is responsible for the framing of the Articles of War, and seeing that they agree with the Mutiny Act?—I apprehend that the Secretary of State for War is responsible for that.

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4112. Does he not take the advice of the Judge Advocate-General?—He usually takes the advice of the Judge Advocate-General, but I apprehend that the Secretary of State for War would be responsible. The practice is for the Secretary of State for War to communicate from the War Office with the Judge Advocate-General from time to time during the year as to the changes to be made in the Mutiny Act and the Articles of War. Some of these changes originate with the Secretary of State for War, some of them in the Judge Advocate-General's own department if he has observed the necessity for them during the year, and some of them arise from changes in the Mutiny Bill during its progress through either House of Parliament before it has become law.

4113. Is it not the Articles of War which are to be judicially taken notice of, and not the Mutiny Act, the words in the Act being, "It shall be lawful for "Her Majesty to make Articles of War for the better "government of Her Majesty's army, which Articles "shall be judicially taken notice of by all judges "and in all courts whatsoever"?—Yes, they are judicially taken notice of as being the Articles of War framed by the Crown; but I apprehend that if a point arose in one of the Courts of Westminster where there was a conflict between the Mutiny Act and the Articles of War, if the Article of War was found to have exceeded or to be contrary to the provisions of the Mutiny Act, the judge would hold that the Mutiny Act was supreme.

4114. You propose, do you not, that the Articles of War should be laid before the House of Commons?—I have stated that I think that after the Mutiny Act is passed there would be no objection to the Articles of War, which are framed in pursuance of that Mutiny Act, being laid upon the tables of both Houses of Parliament, if it were desirable.

4115. Would you call in Parliament to interfere with the Articles of War?—I would not.

4116. Then do you merely mean that, as a matter of curiosity, the Articles of War should be laid upon the table of the House of Commons? Are they not in fact now laid upon the table of the House?—No.

4117. With whom, in your opinion, does the responsibility rest as to the agreement of the Articles of War with the Mutiny Act?—I apprehend that the Secretary of State for War is responsible that the Articles of War correspond with the Mutiny Act, and that in order to inform himself of the way in which he shall discharge that responsibility he takes the advice of the Judge Advocate-General.

4118. Then you do not say that the responsibility rests with the Judge Advocate-General?—No. I think that the responsibility rests with the Secretary of State of War, because he is supreme.

4119. (*Chairman.*) Do you consider yourself to be in the same relation to the Secretary of State for War, with regard to military law, as the legal advisers of the Crown are to the Government?—I consider that I am the legal adviser to the Secretary of State for War whenever I am consulted by him.

4120. (*Lt.-Gen. Peel.*) You do not consider that you are responsible for the framing of the Articles of War unless you are appealed to by the Secretary of State for War?—No. I think I may add to that that both the Mutiny Act and the Articles of War are prepared and edited in the War Office.

4121. (*Chairman.*) You have alluded to some alterations which you have suggested in the Articles of War in the present session; is it not the case that you had nothing to do with those Articles of War the moment they left your office, and that they might have been rejected or adopted without reference to you?—They might have been rejected or adopted. Of course I feel it to be my duty in the course of each year to suggest such amendments as my observation and experience may lead me to think proper in either the Mutiny Act or the Articles of War for the ensuing year, if they are submitted to me; but it is for the Secretary of State either to reject or to accept my suggestions.

4122. (*Lt.-Gen. Peel.*) Taking, for instance, the case that you yourself mentioned when you sent out instructions to the court-martial in Jamaica, did you consult the Secretary of State on that matter?—I did not, because that was a matter in my own department. That was a judicial investigation for the conduct of which I was myself responsible.

4123. But yet I thought you understood to say that you considered it was contrary to the usual custom to direct the court to go and visit this place?—I did not think it was contrary to the usual custom, but I believed it was without precedent, and I believed that without my direct sanction the court might not think it necessary to take any such step; and therefore to obviate any possible difficulty I gave instructions beforehand.

4124. But that was an alteration in the Articles of War, was it not?—It was not an alteration in the Articles of War, because there was nothing in the Articles of War to render it improper to be done; but as there was no precedent I gave directions for it in this case. It was clearly legal. But in order that, if another case arose in which it might be necessary that a court should act without direct reference to the Judge Advocate-General they might do so, I provided an Article of War which would suggest that idea to the minds of any court if they thought it necessary.

4125. With regard to the opinion which you have given, that any sentence is not illegal if it is not forbidden by the terms of any enactment or regulation, do you adhere to that opinion, and if so, how do you reconcile that with the provision in the Mutiny Act, that the Articles of War are to be submitted to the judges, and that with reference to any crimes made punishable by the Act no person is to be punished in any manner which shall not accord with the provisions of the Act?—I would observe in the first place that the Articles of War are not submitted to the judges, though they are to be judicially taken notice of by the judges after their promulgation.

4126. But are not these the words: "And copies of "the same, printed by the Queen's printer, shall, as "soon as may be after the same shall have been made "and established by Her Majesty, be transmitted by "Her Majesty's Secretary of State for the War Department, to the judges of Her Majesty's superior "courts at Westminster, Dublin, and Edinburgh, "respectively"?—They are transmitted to the judges for the information of the judges, but the judges do not give any sanction to them, and the judges are not consulted upon them.

4127. (*Maj.-Gen. Horsford.*) They are not submitted, but transmitted?—They are not submitted, but transmitted.

4128. (*Lt.-Gen. Peel.*) But by this Act you have enabled Her Majesty to frame Articles of War, which Articles of War become the law of the land?—Yes, subject to the provision of the Mutiny Act, "That "no person within the United Kingdom of Great "Britain and Ireland, or within the British Isles, "shall by such Articles of War be subject to suffer "any punishment extending to life or limb, or to be "kept in penal servitude, except for crimes which are "by this Act expressly made liable to such punish-"ments as aforesaid, or shall be subject with reference "to any crimes made punishable by this Act, to be "punished in any manner which shall not accord with "the provisions of this Act."

4129. With reference to this how would you reconcile the opinion given that a sentence was not illegal if it did not correspond with the provisions of this Act?—The sentence to which you refer was a sentence of reduction. I find in the Articles of War a provision for reduction to the ranks. I applied to that Article of War the general principle of law, *omne majus continet in se minus;* and therefore I thought that there was nothing contrary to the provisions of the law in saying that a sentence of reduction less than that of reduction to the ranks would

not be illegal, as it was not contrary either to the Mutiny Act or to the Articles of War.

4130. But did you not go on to explain that it was contrary to the usage of the service?—I went on to state that I thought that such a punishment should not be introduced without authority, as I found no precedent for it.

4131. But would that not bring it within these words, "With reference to any crimes made punish-" able by this Act, to be punished in any manner " which shall not accord with the provisions of this " Act"?—I thought not, because I found an Article of War framed under the provisions of the Mutiny Act providing for reduction to the ranks. As I said before I applied the principle *omne majus continet in se minus*. Reduction to the ranks contains in it the power of giving a reduction less than reduction to the ranks, and therefore I thought there was nothing inconsistent, either with the Mutiny Act or with the Articles of War, in holding such a sentence legal.

4132. (*Lt.-Gen. Scarlett.*) Do you believe that sentence to be according to the usages of the service?—My letter went on to state that I could find no precedent for it, and therefore I thought it ought not to be introduced without authority; but I apprehend if authority had sanctioned such a punishment there would have been nothing in the Articles of War or the Mutiny Act to have rendered it illegal.

4133. But it was not according to the custom of war in like cases?—No. But, I may add that, in a case nearly analogous, a sentence nearly similar and also without precedent had been sanctioned by authority, on a schoolmaster.

4134. (*Marquis of Hartington.*) I understand you to suggest that the Articles of War should have an authority analogous to that of an Order in Council under an Act of Parliament?—I did not suggest that they should have it. I suggested that as an analogous instance, as showing the convenience of having some more elastic provision than an Act of Parliament.

4135. But with regard to the ordinary criminal law of the land that is not found necessary, is it; ordinary criminal offences in civil life being dealt with under Acts of Parliament?—I suggested that the Mutiny Act should still contain the same restrictions as to punishments extending to life or limb as at present. I would not in any way diminish the restrictions of the Mutiny Act, but I think there is a convenience in the Articles of War providing in detail for the punishment of offences.

4136. You do not think that if the Mutiny Act were re-written, as you suggest it should be, that would be sufficient as regards law, and that the Queen's Regulations might contain everything that was necessary relating to practice?—It might be so, it was merely the mode of doing it. I think probably the more convenient mode would be that which I suggest, and one reason which I give for it is, that it was found necessary after 28 years of experience of the first Mutiny Act to give the Crown power to frame Articles of War.

4137. But the attempt was not made then to re-write the Mutiny Act?—No, and I am afraid the attempt has never been made from that day to this.

4138. But might not a revised Mutiny Act render it unnecessary to have anything more than regulations as regards practice?—It might. As I have said, I consider it is merely a *modus operandi;* and if it was thought fit to make the Mutiny Act like the Naval Discipline Act, and to enact the Articles of War in the Mutiny Act, I see no objection to doing it; but I think the Mutiny Act should remain as it is at present, an annual Act.

4139. (*Chairman.*) In your office you, I believe, often have to prepare the charges for a court-martial?—In almost every case, where application is made for a general court-martial, it is the practice to request the Judge Advocate-General to settle the charges, and that is a point upon which I think it is highly desirable that a change should be made.

4140. What change would you suggest?—I think that the charges should be prepared by a legal assistant attached to the office of the Adjutant-General. I believe it is ordinarily the practice that application is made to the Horse Guards for sanction of a general court-martial, or to the General commanding in Ireland, and I think that there should be a legal assistant, a kind of clerk of indictments, or whatever you may term him, attached to the office of the Adjutant-General, whose duty it should be to prepare the charges and advise on the evidence. It has been stated by a witness who has been examined here, Mr. Vernon Harcourt, in reference to a particular case to which he alluded, that witnesses were examined in the Judge Advocate-General's office. I can only state my own experience that I never saw or heard of any witness ever being examined in the Judge Advocate-General's office with reference to any trial. The ordinary course is, for an application to be made, as I have stated, by the General who has ordered the court-martial. He incloses a statement of the evidence and the charges, which he submits to my office to be settled. Then those charges are settled, and there is a common form, of which I have a copy here, in which they are sent out from the Judge Advocate-General's office:—

"Sir,

"I have the honour to acknowledge the receipt of your letter of the preferred against , and requesting my opinion whether in a fit state for investigation before a general court-martial.

"In reply I have to acquaint you appear to me in a fit state for investigation before a general court-martial.

"Of course, if any of the facts are incorrectly stated in the charge, the necessary alterations will be made by the officer preferring the same.

"I have the honour to be,

"Sir,

"Your most obedient Servant."

With respect to what was stated about depositions having been taken, I have at the request of Mr. Headlam made inquiries in the office, and I cannot find that any depositions were taken previous to that trial, or that any application was ever made to the office for the depositions. The letter books of the year, beginning at an early period and extending to a period over the termination of that trial, have all been searched, and they contain no application whatever for any depositions. With respect to the case generally, of course the charges are ordinarily settled by my deputy, and I see them; but I never feel that I am in any way enlisted or interested in any prosecution. I desire to reserve myself both as to the legal framing of the charges and as to the evidence, in a perfect state of impartiality when the case comes up to me as (what I consider I am practically) the ultimate court of appeal; but I think it is very desirable that the Judge Advocate-General should be entirely relieved of what is one of the most unpleasant parts of his duties, viz., having anything to do with advising the prosecution or settling the charges, but that he should remain in a perfectly impartial position, so that when the case comes before him, after being fully tried, he should be free to deal with the charges as he finds them, and to state whether they are legal or not, and to decide whether or not the evidence bears out the conviction.

4141. (*Lt.-Gen. Peel.*) Then would you not submit to anyone previously to the trial the question whether the charges were legal or illegal?—Yes, I think there should be attached to the office of the Adjutant-General at the Horse Guards and to any other office that might be thought necessary in Ireland, a legal adviser who should settle the charges and deal with the evidence. I would have the procedure of the court correspond to the ordinary course of pro-

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ceedings in a criminal court. The clerk of indictments prepares the indictment, and then, when exception is taken to that indictment, the judge rules as to whether it is right or wrong.

4142. That is previous to the trial?—No, when the case is brought on. No judge has to settle before a trial the way in which a charge is to be framed which he is afterwards to try.

4143. But he would point out previous to the trial any illegality in the charge, would he not?—I think the Judge Advocate-General should be in the position of a judge in a criminal court, that the case should be got up and the charges settled, and that then he should deal with it.

4144. (*Chairman.*) Is the Judge Advocate exactly in the position of a judge in a court; is not the president of the court the person who is in the position of the judge?—The Judge Advocate-General is really more and more becoming a sort of court of appeal in military matters. That I apprehend to be his true position. It is so virtually at present, but it is impossible that the court of appeal can approach a case in an impartial and judicial sense if the individual who forms the court of appeal has his own personal feelings enlisted in support of the charges, by having himself drawn the charges. I may sanction a charge which a legal gentleman versed in criminal law may find to be defective; but if it is my own charge I have naturally a feeling of desire to support my own charge and to hold it to be right, whereas if the charge were drawn by some one else, and the objection were taken by some one else, I could then approach it with through and entire impartiality, and decide the thing strictly according to law.

4145. (*Chairman.*) Seeing that in India they have not access to your office, I presume you think that in India it is still more necessary that there should be a legal department similar to yours?—In India I think it is most important that a change should be made. I may state that the Indian trials are conducted no doubt with extreme care and very minute accuracy and with an amount of painstaking industry which is highly creditable; but I think that the administration of justice in India suffers very much from there being no civilian connected with the Judge Advocate-General's department in the same independent position as the Judge Advocate-General holds in England, and I have felt it my duty to correspond with the Secretary of State for India, and with the Commander-in-Chief with reference to it, and I may state that the Secretary of State for India has communicated both with Sir William Mansfield and with the Governor-General of India and sanction has been obtained that when any vacancy takes place in the appointment of Judge Advocate-General in India the post will be held by a lawyer, who will receive a higher salary, and who will occupy a higher position than the Judge Advocate-General has hitherto occupied in that country. That arrangement has received the sanction of the Secretary of State for India and it will be carried out as soon as a vacancy occurs in the office of Judge Advocate-General.

4146. Have you any further suggestions to make as to the official duties of the Judge Advocate-General?—I think that there is a great advantage in the position which the Judge Advocate-General occupies, feeling that he is responsible to Parliament for every case that comes before him, and I think it is very desirable that a person holding that post should occupy the independent position which the Judge Advocate-General does.

4147. Have you any suggestions to make to the Commission with regard to the constitution of general courts-martial?—With respect to courts-martial generally, I would observe that I think it would be very desirable to reduce their number to two. At present there are five court-martials of various kinds. I would have a general court-martial to try all cases of officers and all grave offences. I would abolish regimental courts-martial, giving greater power to the commanding officer, and then I would have a minor court-martial (whether it should be called a district, or a garrison, or a brigade, court-martial, I care not,) to try lesser offences which are not tried by general courts-martial. With respect to the general court-martial, I should like to see the number of officers who compose it very much reduced. The number of officers was 13, but by the Mutiny Act and the Articles of War of this year it has been reduced to nine. For my own part I should like to see it reduced, certainly, to seven, and possibly to five; my own opinion would be in favour of five, but with the experience we have of the Jamaica cases on Ensign Cullen and Assistant-Surgeon Morris, and which I think I may say were most admirably tried by a court-martial of seven, a reduction to that number might certainly be adopted. If five seems a small number it is to be borne in mind that according to the present law it is a very common practice to put one or two more members to sit on the court in the case of vacancy occurring. We had, I think, two extra members on the Jamaica court-martial, because, if the number was reduced by illness or death, the court could give no finding. That is a point on which I should like to make a change. I would have a quorum, and I would say still, that if the number were reduced by illness or death, if it were reduced to five, for instance, the court should still sit and find in the case.

4148. (*Lt.-Gen. Peel.*) But the Jamaica court-martial is hardly a precedent, is it; were not the officers specially selected to be sent out there and were they not rather superior?—The officers were specially selected from England, and they were undoubtedly rather superior, but at the same time I think the sense of responsibility is much greater the more you diminish the number, and I should be very glad to see nine reduced either to seven or to five.

4149. (*Chairman.*) With regard to the presidents, would you suggest any alteration in the mode in which the president of a court-martial is appointed?—Yes, I should have a number of officers appointed as permanent presidents of courts-martial, who had been trained in military law, and had undergone an examination in military law, and who had served first as presidents of district courts-martial, or brigade courts-martial, or whatever you may term them. Many members of the Commission will be perfectly well aware of the great advantage which has resulted in the House of Commons from the chairmen's panel of Election Committees, from having a panel of chairmen for the trial of railway Bills, and from having a number of the members of the House who act as chairmen of turnpike Bills; and I think, in the same way, that if you had a number of trained and experienced presidents to preside over courts-martial, you would have a uniformity of practice and a continuity of decision which would be very valuable with regard to the administration of justice.

4150. Would you confine that to general courts-martial, or would you apply it to district courts-martial also?—I am speaking at present of general courts-martial, but the same observation would apply to district courts-martial. In fact, I think the permanent presidents of general courts-martial would be selected from those who had proved themselves able presidents of district courts-martial.

4151. (*Lt.-Gen. Peel.*) But in the House of Commons to which you have referred, people are always on the spot, are they not, so that there is no difficulty in at once appointing him?—No doubt some difficulty might occur at remote commands, but within the United Kingdom, and probably in most of the colonies, there would be no very great difficulty in finding a number of trained men to act as presidents.

4152. Would you appoint specially, exclusive of regimental duties, a set of men as presidents of courts-martial?—I do not think I have sufficient military experience to say how I would find them, or whether I would remove them from their commands or not. They might be like the three officers who at present act in the United Kingdom as district Judge Advocates, and who, I believe, are all half-pay officers.

My military experience does not enable me to prescribe the precise mode of carrying it out.

4153. Would it not cause additional expense?—I have no doubt that it would, but I think if it is desirable, as I believe it is desirable, to improve the administration of justice in the army, the nation will be prepared to pay the increased expense.

4154. Have you formed that opinion which you have expressed from any deficiency you have found in the presidents of courts-martial?—It is invidious to point to the deficiency, but as a matter of fact I state that day by day, and week by week, I have to write letters with reference to the irregularities that occur upon trials.

4155. (*Viscount Eversley.*) Would you not obtain nearly the same object if you multiplied the number of Deputy Judge Advocates?—With respect to that, I may say that I would strengthen the court in two ways. First of all I would strengthen the court by having a permanent president, as far as possible. In order to meet the feelings of the army, the president of the court should remain, as at present, a military man; and then my own preference would be for a legal Judge Advocate; but then there would occur, no doubt, two considerations, namely, the feeling of the army as to the presence of a lawyer acting as assessor of the court, and the question suggested by General Peel of the expense; because I presume that if you had a lawyer as Judge Advocate he would expect a much larger salary than is at present paid to the military Deputy Judge Advocates. A question was asked with reference to any failures on the part of presidents of courts-martial; and my suggestion of a barrister to act as district Judge Advocate might seem to imply that I saw some deficiency in the able military gentlemen who are at present acting as district Judge Advocates in the United Kingdom; but that is not the case. In fact, I myself have derived very great assistance from the presence of the Deputy Judge Advocate in London, who is constantly at my office, and to whom I can always have recourse in questions turning upon the custom of the service and the feelings of the service; but at the same time I think, upon the whole, that a barrister with more entire legal training and more judicial habits of thought would be likely to give greater regularity to the proceedings of courts-martial, and to give, therefore, greater satisfaction to the public.

4156. (*Lt.-Gen. Scarlett.*) Do you allude to district courts-martial as well as to general courts-martial in that observation?—I have been speaking, as I said before, at present, entirely as to general courts-martial. My idea is that if there were legal Deputy Judge Advocates they should attend any trial at a district court-martial where the officer who convened the court thought it important that a legal Judge Advocate should attend; and that they should in all cases read the proceedings before confirmation by the confirming officer; but having reference to the very simple nature of a number of the trials, such as those for habitual drunkenness, and for making away with necessaries, and things which really involve no law, and where the evidence is very simple and the proof is very clear, I think that it would be unnecessary that they should attend all district courts-martial.

4157. (*Lt.-Gen. Peel.*) Do you agree with Mr. Vernon Harcourt that if those officers were appointed the Judge Advocate-General's office might be done away with altogether?—No, I think that the Judge Advocate-General would remain as a court of appeal, and I think that when the number of courts-martial, and the delicate cases which arise on courts-martial, and the intricacies of courts-martial are considered, it is very advantageous that there should be an individual holding the high position that the Judge Advocate-General does, who is entirely independent of the military authorities, who may take a thoroughly impartial view of the case, and who is responsible to Parliament in every case which arises.

4158. Would you not make those permanent presidents and legal assessors perfectly independent?—They would be perfectly independent, but I cannot assume that they would always decide rightly, or that no questions would arise upon their decisions.

4159. By whom would the charges be drawn up if you had these legal assessors or permanent presidents?—The charges would be drawn up by whomsoever the prosecution was ordered. I have stated before that the conduct of the prosecution should be quite distinct from those who have to deal with the case judicially. It is provided now, under the 159th Article, that "No person acting as prosecutor or "being a witness for the prosecution shall also act as "Judge Advocate at a trial." In a trial at the Old Bailey, for instance, there is a clerk of indictments; there is a person whose business it is to prepare the charges, and there is a solicitor who gets up the prosecution; and then when the case is tried the court decides the points of law which arise, and if any decision of that court is challenged there is an appeal to some higher tribunal. So in this case there would be an officer attached to the Adjutant-General's office, or elsewhere, where the case for the prosecution might be got up and the charges prepared, and then the court would decide all points raised before it, and in case of an appeal the Judge Advocate-General would be the ultimate court which would review the decision of what I may term the court below, the court-martial.

4160. You wish to remove the duty of framing the charges in the first instance from the Judge Advocate-General's office where it now is, do you not?—Entirely.

4161. Then upon whom would you impose that duty?—I have suggested the Adjutant-General's office.

4162. You suggest, do you not, that there should be an additional legal assistant at the Adjutant-General's office where the charges are to be framed?—Yes.

4163. In addition to the permanent president and the legal assessor to the court?—It may either be done by any legal adviser attached to the Adjutant-General's office or the case for the prosecution may be got up by the solicitor to the War Office, as cases for prosecution at the Old Bailey are got up by any other solicitor. It is not so much that I would suggest that the prosecution should be got up in any particular place, as that the conduct of the prosecution should be entirely removed, either from the Judge Advocate, who has to advise the court at the trial, or from the Judge Advocate-General, who has to review the proceedings of that court. I think being interested in any way in getting up the case for the prosecution is entirely incompatible with the independent and impartial discharge of his judicial duties by the Judge Advocate or the Judge Advocate-General.

4164. (*Capt. Vivian.*) You propose, do you not, that those new courts should be presided over by permanent presidents?—Yes.

4165. Would you propose that the courts should sit in permanence?—No, the courts would sit as trials arise from time to time.

4166. For how long should the permanent presidents be elected?—They might be for five years, or any shorter period.

4167. Then you propose that in each district there should be an assessor, whose duty it would be to attend upon the court and to assist them with all necessary legal advice, so as to keep them strictly to military law?—Yes.

4168. And you still think, nevertheless, that those proceedings should be subject to the revision of the Judge Advocate-General?—I think so.

4169. (*Chairman.*) You have nothing in any way whatever to do with the appointment of prosecutor, have you?—Nothing.

4170. You do not even advise as to who shall be appointed prosecutor?—No.

4171. (*Lt.-Gen. Scarlett.*) Have you power to select a legal Judge Advocate in intricate cases, or

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in cases where lawyers are appointed on both sides, instead of appointing one of your usual Judge Advocates?—It is for the reason that in a difficult case as things are now it is necessary to have a double agency, that I suggest that an acting Judge Advocate should be a barrister.

4172. But you have the power to appoint one now, have you not?—I will take the Jamaica case as an illustration. The military Judge Advocate who was sent out by the Horse Guards was a very efficient gentleman, but the case was so extremely difficult that I suggested that a barrister should also accompany him, and I prevailed upon a very learned gentleman to go out and undertake that task. The fact was that there were two persons on that occasion representing the Judge Advocate-General's department. There was the military Judge Advocate, and there was the legal Judge Advocate. What happened at the trial was this: that the legal Judge Advocate was the gentleman who really advised the court, who prepared the summing up, and who advised on every question of examination or cross-examination; but of course the summing up was read by the military Judge Advocate; and therefore there was a double agency, which was expensive, and I suppose, to some extent, inconvenient. It worked very well and very harmoniously in that case, but I can conceive cases in which it might not work harmoniously.

4173. (*Viscount Eversley.*) I understood you to say just now that you recommended that there should be only two descriptions of courts-martial, the general and the district court-martial. I presume that you would then have the proceedings of the district court-martial referred to the Judge Advocate-General before the sentence was confirmed by the confirming officer?—I think that the evidence given before this Commission has rather led me to the conclusion that it might be expedient to do away with regimental courts-martial. I have no very great experience of regimental courts-martial, because they do not come to my office, and it is only occasionally that I am consulted upon them, but I think that the evidence which we have had before this Commission has led us to that conclusion. Then, with respect to district courts-martial, or whatever they are to be termed, I think that one of those Judge Advocates should not necessarily be present at the trial, but that he should only be present if the officer convening the court thinks it is a case where it is necessary to have the assistance of a Judge Advocate; but that he should in all cases read the proceedings before they are confirmed by the confirming officer.

4174. Is it not the case that now the proceedings sometimes reach the Judge Advocate-General after the sentence has been actually carried into effect?—They do; and as long as corporal punishment was in force that might have been a very awkward question.

4175. (*Marquis of Hartington.*) I do not understand you to propose positively that a new staff officer should be appointed in the shape of a permanent president, but that a roster should be kept of officers who were specially qualified to act as presidents. Is that your suggestion?—Yes. I think that that would probably be the most convenient way of doing it.

4176. It is not absolutely necessary for a new staff officer to be appointed?—So far from its being necessary I think that it would be quite unnecessary, because the average of general courts-martial held in the United Kingdom in the last 20 years is 64, and the average will probably be found in future years not to exceed 50.

4177. How is the president of a general court-martial selected now?—He is selected by the general officer who commands the district, I believe; but in an important court-martial the president would be named by the Adjutant-General under the direction of the Commander-in-Chief.

4178. Is the Judge Advocate-General ever consulted now in the selection of the president of a court-martial?—Never.

4179. As far as you are aware, is he now selected without any special qualification as to knowledge of military law?—I do not know the grounds of his selection.

4180. (*Chairman.*) Has it ever been brought to your notice officially that prosecutors have given evidence on courts-martial?—Yes, and I had a very strong case of it this year, where a prosecutor was the first witness. He was examined by the Judge Advocate, and as soon as he had been examined, and when he was about to be cross-examined by the prisoner, the court stopped the questions in cross-examination, and ultimately the prosecutor in his reply made some statements with reference to some points on which he had been stopped in cross-examination. That was a case which occurred in India. I would prohibit any person who was to be a witness under any circumstances from acting as prosecutor.

4181. (*Capt. Vivian.*) Were the proceedings of that court-martial under those circumstances held to be within the law?—No, they were set aside by my advice.

4182. (*Chairman.*) But would you set aside the finding of a court-martial upon the ground alone that evidence had been given by the prosecutor?—According to the present practice, I could not set aside the proceedings on the ground that a witness had acted as prosecutor; but if I saw that a witness who had acted as prosecutor had made statements in a speech as prosecutor, which statements were not upon oath, but which supported the case beyond what he had stated in his evidence upon oath, I then should think it right to set aside the proceedings. In fact, I think that there ought to be a person who is not in any way a witness or concerned in the trial specially appointed in every case to act as prosecutor, and that it should be his duty to get up the case for the prosecution just as an attorney or counsel gets up a case in a criminal court. I would assimilate the proceedings of courts-martial as much as possible to those of an ordinary criminal court. I may add that my experience of regimental courts-martial is very limited; it is generally confined to cases in which there is irregularity, and they are frequently set aside. The evidence before this Commission leads me to think that regimental courts-martial should be done away with.

4183. Do you think that there is any objection to a prisoner having assisance in this defence, and in his adviser being allowed the same power of addressing the court which the prosecutor has?—I should think not. In the Fenian trials many of the prisoners have had counsel, and of course the addresses which they have delivered have no doubt been drawn up for them by their legal advisers. I cannot myself understand the objection to an address being read to the court by any legal gentleman who may be present. That appears to be rather a matter of military feeling.

4184. From your experience could you make any suggestion to the Commission as to the advisability or otherwise of a shorthand writer being admitted to a district court-martial?—I would employ a shorthand writer in all cases of general courts-martial.

4185. On whom would you throw the expense of the shorthand writer?—I presume that the expense must be thrown upon the county, as is the case with all expense connected with the administration of justice. There is no other fund from which it could come; but it is so very important that a full record of the proceedings should be kept to be read ultimately by the Judge Advocate-General, and it is so very important that there should be no delay in the cross-examination of witnesses, that I think it is desirable that a shorthand writer should always be employed at a general court-martial. The questions will then be put *vivâ voce* with rapidity, and the answers will be taken down, and a witness who is inclined to perjure himself will be cross-examined with much greater effect.

4186. (*Capt. Vivian.*) Do you desire that the president of a court-martial should be the authority to decide whether a question in cross-examination or

in direct examination is relevant or irrelevant?—Yes, he would decide it, but he would decide upon the advice of the Judge Advocate who was present.

4187. Of the legal assessor?—Of the legal assessor.

4188. (*Mr. Headlam.*) Supposing him to be a permanent president of courts-martial, and that a Deputy Judge Advocate was present, who would be the authority who would decide upon any doubtful point?—I think the legal assessor must be the ultimate authority, and his opinion must be conclusive.

4189. So that although the president would become a permanent one, you would still leave him in all questions of that kind subordinate to the legal assessor or the Deputy Judge Advocate?—I would.

4190. (*Chairman.*) Do you hold that it is absolutely legally necessary that the court should be guided by any opinion which it receives from the Deputy Judge Advocate in matters of military law?—I think that it ought to be so. At present, as the Commission are aware, "The opinion of the Deputy "Judge Advocate ought to be conclusive upon any "point of law or procedure which arises upon a trial "at which he officially attends."

4191. Have you ever heard of that point being disputed in a court-martial?—I have never seen an instance of it myself, but I believe that there was one instance in my predecessor's time where a court, contrary to the opinion of the Judge Advocate, illegally sentenced a person to penal servitude, and that had to be sent back, and they had to revise the sentence accordingly, the sentence being illegal.

4192. I think that I collect from the evidence which you have given that you are for applying all the rules of a general court-martial to a district court-martial?—I think I would do so, except that I think in the mass of cases tried at district courts-martial it would not probably be necessary that a Deputy Judge Advocate should attend. I think that a Deputy Judge Advocate should attend whenever the officer who convenes the court thinks that it is such a case as requires that the court should be assisted with a Deputy Judge Advocate's advice, and I think that in all cases the proceedings should be submitted to the Deputy Judge Advocate before they are confirmed by the confirming officer.

4193. But would not that create a very great delay as compared with what is the case now?—I do not think that it would create great delay. That question has been asked before, but knowing how many of those district courts-martial it is possible to read in the course of a day, and seeing how much the reading of them has been simplified by the printed forms which are now in use, I think there would be no difficulty in the Deputy Judge Advocates getting through the work very easily, inasmuch as there are three districts, two in England and one in Ireland.

4194. (*Lt.-Gen. Scarlett.*) Do you mean that those three Deputy Judge-Advocates should attend every court-martial?—No; that they should only attend in exceptional cases, where the officer convening the court thought it necessary that the court should be assisted by such advice—but that the proceedings in all cases should be sent to them. I am told that is the case in India, and that it works well there; and I do not see why there should be any great delay in the United Kingdom.

4195. Is it not the case now that courts-martial are sent to the Deputy Judge Advocates to forward to the Judge Advocate-General after being confirmed?—At present they are first confirmed by the confirming officer, and then they are sent to the Deputy Judge-Advocate of the district.

4196. Then he looks them over and sends them to the Judge Advocate-General, does he not?—He does; but if the punishment has been inflicted it is rather late to try and stop it.

4197. (*Chairman.*) Do you find upon the whole that there are many cases of injustice done by district courts-martial, or upon the whole is justice done?—I am not at all prepared to say that there are many cases in which justice is not done, but there are a good many cases in which various irregularities occur.

4198. But where those irregularities occur does it happen generally that the guilty man escapes, or that the innocent man is convicted?—I would not say that an innocent man was often convicted, but many a man is often not convicted according to the law.

4199. (*Capt. Vivian.*) Do you see any reason why, provided the court is in future composed as you suggest of a permanent president assisted by a legal assessor, always to be present, the sentence of the court should not, whether it is an acquittal or conviction, be at once delivered?—I have said before that I see no reason why it should not be delivered in cases of acquittal. In cases of conviction I really do not think that there is very much to be gained by it, because the sentence runs from the time when it is passed. The only question is as to the intermediate custody of the man.

4200. But would it not be difficult to decide that acquittals should be at once made known while the announcement of convictions and of the punishments accompanying them was to be reserved until the revising officer had corrected the court-martial, and it had been confirmed?—It would of course be inconsistent with the present custom of secrecy as to the decision of courts-martial, but I see no other objection. In case of acquittal in an ordinary criminal case a man leaves the dock directly. With respect to a sentence, I see no difficulty except as to the intermediate custody.

4201. But in a civil case a man also knows his sentence immediately, does he not?—He knows his sentence immediately, but I do not know that that is a great advantage or boon to him.

4202. Of course there is always anxiety of mind on the part of the prisoner as to the amount of the sentence which the court have awarded when he knows that he has been found guilty and does not know what his sentence is?—I think, as I said before, that the real objection to it is the difficulty as to intermediate custody, where to keep the man.

4203. A man now is put into a prison pending the confirmation of his sentence, is he not?—He is.

4204. And directly his sentence is confirmed, if he is sentenced to penal servitude, he is sent off at once to commence his punishment?—He is after his sentence is confirmed.

4205. (*Lt.-Gen. Scarlett.*) Would you do away with the power of confirming or of revising courts-martial, and would you let the decision of the court be final, whether it was acquittal or conviction?—If the court is strengthened as I suggest I would let the decision in case of acquittal be final; but in case of conviction, seeing that after all the tribunals would not be as perfect as our ordinary criminal tribunals, and that to a certain extent any new system must be an experiment, I think it desirable to retain the power of the confirming officer. In fact I think that it is for the interest of the person tried that there should be such a confirmation, it gives him one more chance of escape.

4206. (*Chairman.*) With regard to cases of embezzlement, I believe that you have some strong opinions?—I think I may state generally and almost universally that such cases are badly tried, and that a court-martial is quite incompetent to try them. In all those cases the amount of evidence is most imperfect and insufficient and there is nothing which embarrasses me so much in the discharge of my duties as to know what to do in those cases of embezzlement. There appears now to be a great number of funds in the army, mess funds, and recreation funds, and so on, and illiterate persons are employed to keep the accounts in connexion with those funds. They are brought to trial for embezzlement in connexion with those accounts. The case is not proved according to the ordinary rules of evidence; and not unfrequently there is a conviction, followed by a sentence of imprisonment, and there are also frequently stoppages

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to a very large amount. They are the most difficult cases with which I have to deal; I am constantly obliged to set them aside with the conviction probably that the man is guilty although the case has not been proved; or I find such a large amount of stoppages awarded as there is no evidence to support, and I have to recommend that the stoppages be set aside, although there may have been evidence of embezzlement to some amount. I think that embezzlement is not at all in its nature a military offence; I would send it to the ordinary criminal tribunals of the country, and I am sure it would be tried much more satisfactorily by them.

4207. (*Capt. Vivian.*) Would you propose to make it compulsory to try all those cases by a civil court; or would you leave it to the discretion of a commanding officer to try them either by a civil or by a military court?—I am inclined to think that I would send all cases of embezzlement at once to a civil court. The only doubt which arises in my mind is as to cases of this kind which may be simple and might be much simpler than they are: a man receives certain monies, or he receives certain provisions or whatever it may be, and he has to keep certain accounts; if the case can be proved by his own accounts, and by documents signed in his own handwriting, then I think the case is so simple that it might be fairly disposed of by a court-martial; but the moment that any question of account arises and that it cannot be proved by admissions on his own part, I find the evidence so very unsatisfactory that I am certain it ought to be handed over to a tribunal which is more used to the laws of evidence.

4208. But my question pointed to the difficulty which would arise supposing it were compulsory on a commanding officer to send all cases of embezzlement to the civil power. In the colonies it might be found difficult to send a prisoner before any civil tribunal; would you not in such cases leave it in the power of a commanding officer to try certain cases of embezzlement by military courts-martial if he thought it advisable, or if the case was so simple as to cause very little risk of there being anything wrong as to the evidence?—I am not sure that I would make it compulsory; I do not think that there would be any difficulty in making it compulsory in the United Kingdom, and in the colonies it might be desirable to give power to try those cases just as under the 101st clause of the Mutiny Act, by which power is given to a general court-martial in India to the officers or soldiers serving at a distance of upwards of 120 miles from the three presidencies for various offences which would be tried by a civil court elsewhere.

4209. (*Lt.-Gen. Scarlett.*) How would you provide for the expenses of the prosecution in the case of a civil trial?—They would be defrayed in the usual way in which expenses are provided for at the criminal courts; the county would pay them, and then they would be recouped to some extent by the Treasury. It would fall under the ordinary rule of the administration of criminal justice.

4210. Would any expense fall upon the regiment to which the culprit belonged, or upon those who prosecuted him?—The officer of the criminal court who allowed the expense would allow the ordinary expenses which he allows to civilians at an ordinary prosecution at the Old Bailey or elsewhere, or at the assizes.

4211. (*Chairman.*) Have you formed any opinion with regard to courts of enquiry?—No; I have very little experience of courts of enquiry, but I think that one objection to courts of enquiry arises from their being called "courts." They are not "courts;" they are not judicial investigations. They have no power of administering an oath, and therefore the evidence not being taken under the sanction of an oath is not of the same value as the evidence taken at courts-martial. I think that enquiries such as are instituted at courts of enquiry may be very desirable for the information of commanding officers, and it may be probably necessary that they should exist; but whether they should be called commissions of enquiry or committees of enquiry, or what other term there should be, I do not know. If the name of court of enquiry is retained as a preliminary enquiry, it may be desirable that their functions should be assimilated in some measure to those of a grand jury, or that they should be assimilated to those which are possessed by magistrates at petty sessions, where evidence is taken on oath, or under the Church Discipline Act, where a commission of enquiry is preliminary to any proceedings against a clergyman who has committed a criminal offence. That commission of enquiry is appointed by the bishop, and it has power to examine witnesses on oath and to report to the bishop, and then the bishop, with the assent of the accused party, can judge the matter, just as magistrates under the Criminal Justice Act are constantly in the habit of disposing of cases at once. If courts of enquiry were armed with the power of taking evidence upon oath, and were remodelled in that way, they might form a simple mode of despatching business; but, as I stated before, I have very little information as to courts of enquiry, and my evidence upon that point is therefore rather theoretical.

4212. Have you had any complaints in your department of a court of enquiry being substituted for a court-martial?—No; I have never heard of a court of enquiry being substituted for a court-martial. I believe there is a difficulty with respect to officers on half-pay. Officers on half-pay are not liable to be tried by courts-martial: and sometimes it is found to be necessary to have courts of enquiry with reference to cases where an officer on half-pay has misconducted himself in some way.

4213. (*Capt. Vivian.*) Do you hold that by the wording of the Articles of War officers on half-pay are legally exempted from being tried by courts-martial?—I believe that is quite clear: "All the provisions "of this Act shall apply to all persons who are, or "shall be commissioned, or in pay as an officer."

4214. Do you hold that those words do really exempt officers on half-pay from being tried by courts-martial?—I believe that it has always been so held.

4215. But do you believe that legally those words do so exempt an officer on half-pay?—In 1785 the judges decided that a half-pay officer was not subject to military law. The practice has been clear for a century and I am unable to place any other interpretation on the Act unless Parliament makes the change.

Adjourned to Thursday next at 12 o'clock.

Thursday, 28th May 1868.

PRESENT :

COLONEL THE RIGHT HON. JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
THE RIGHT HON. RUSSELL GURNEY.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER.
CAPTAIN THE HON. J. C. W. VIVIAN.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

FIELD-MARSHAL HIS ROYAL HIGHNESS THE DUKE OF CAMBRIDGE, K.G., K.P., G.C.B., G.C.H., G.C.M.G., &c., &c., examined.

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4216. (*Chairman.*) I believe that your Royal Highness is aware of the object of this Commission, which is to inquire into the present system of courts-martial, general, district, and regimental, and to consider whether any alteration should be made in them, and whether any alteration can be made in the system of military punishments?—I am.

4217. In the first instance I would ask your Royal Highness to be good enough to give your opinion to the Commission as to the present constitution of general courts-martial. The number of officers on a general court-martial has been reduced in number from 13 to 9, and evidence has been given to this Commission that they are capable of further reduction to seven with advantage?—I do not see any reason why the number should not be reduced. At the same time a general court-martial is the highest military tribunal which we have, and therefore one would not like to make it less formal than it is at present. I do not know that the fact of reducing the number would have that effect; but if it did I should regret to see any further reduction made; otherwise I should not object.

4218. It has been suggested that the advantage of a further reduction would be an increase of responsibility on the members of the court; would that be your Royal Highness's opinion?—I think that all members of a general court-martial feel their responsibility, whether they are nine or seven in number, and I do not think that it would make any difference in that respect.

4219. Several suggestions have been made to this Commission with reference to defects in the constitution of the courts, especially as regards the knowledge of military law on the part of the officers composing the courts. It appears that there are a great many revisals of sentences and findings of courts-martial in the Judge Advocate-General's office, and it has been suggested that one of the causes of this is a want of sufficient military knowledge on the part of the officers, and especially a want of knowledge as to the laws of evidence. Does your Royal Highness think that any alteration could be made with advantage in the examination of officers in military law, the practice of the army, and the laws of evidence?—I think that the examinations might be more strict than they are at present, but I certainly think that everything connected with military law should be made clear and simple, so that he who runs may read, and I do not think that that is the case now. I think that the Mutiny Act, and the Articles of War, and everything connected with them might be extremely simplified, and if anybody would undertake that task I feel perfectly certain that you would not have half the perplexities and annoyances which now arise. I think that many officers of the army are in doubt as to the meaning of the wording of the Mutiny Act and the Articles of War, in various instances.

4220. It has been suggested that it might be advisable to institute a military code separate from the Mutiny Act, and made applicable simply by a clause in that Act, would your Royal Highness approve of that?—I think that you want a military text book for courts-martial. There is a book which is recommended, which is Simmons on Courts-martial, and yet, if you refer to that book, you will find that it is constantly at variance with the Mutiny Act, because Simmons is not corrected from year to year, whereas the Mutiny Act may be changed from year to year. The result is that a court-martial is advised by the military authorities to look to Simmons for assistance when required, (for though I admit that Simmons is not an official book still it is referred to in the Queen's Regulations,) and yet when we come to particular instances, of which we had one the other day, Simmons may say one thing and the Mutiny Act another. It therefore places the officers in a most awkward position, because they imagine that they are doing a right thing by referring to Simmons, and then it may be found that he is not correct.

4221. From your Royal Highness's experience of the revisions of courts-martial do you concur in one of the causes of the frequency of revisions to which I have just alluded being the inexperience of officers in military law?—I think that it is less from inexperience than from what I have explained just now, namely, the difficulty of understanding what is actually meant.

4222. There has been considerable difference of opinion expressed as to the mode in which courts-martial should be conducted, and first as to the mode in which the evidence should be taken. It has been suggested that now that short-hand writers are admitted into general courts-martial it is no longer necessary to continue the practice of putting any of the questions down in writing; what is your Royal Highness's opinion upon that point?—I should think that it would be a very great pity to alter the present practice. I do not see the least advantage in altering it, and I think it would be much better to leave that as it is.

4223. The present mode of procedure is said, however, to create great delay in the conduct of the business of the Court; is there any mode of taking it down which your Royal Highness could suggest to shorten the proceedings?—I do think that there is any delay that signifies. The present mode of procedure gives a little more trouble, but I think it is just as well that it should continue as it is at present.

4224. Is your Royal Highness of opinion with some of the witnesses who have been examined that the present system is rather in favour of the prisoner than otherwise?—The present system is rather in favour of the prisoner than otherwise, and therefore I should be sorry to see it changed.

4225. It has also been suggested by some of the witnesses that an alteration might be made in the practice of not allowing an advocate of any sort, whether military or legal, to address the court on behalf of the prisoner; do you think that any such alteration would be attended with advantage?—I think that it would be very undesirable that anybody should address the court on behalf of the prisoner. There would be no objection whatever to the prisoner's defence being read by somebody, but

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that the court should be addressed in a speech I think would be very undesirable.

4226. Would your Royal Highness continue then the practice of the prosecutor's addressing the court for the prosecution?—The prosecutor only addresses the court in order to explain the general circumstances under which the offence has been committed, and to deal with anything which may arise during the proceedings, but beyond that he does not address the court.

4227. It has been stated that on some occasions the prosecutor being entitled to a reply upon the evidence, has exercised that power in summing up the case and addressing the court for the prosecution, would your Royal Highness approve of such a mode of procedure?—The prosecutor has a right to explain anything connected with the prosecution which he has originally brought forward which requires explanation; but he has no right to sum up, and if he does sum up I consider that it is the business of the president to stop him.

4228. Does your Royal Highness think that it is the business of the president also to stop him if he proceeds to argue upon the case?—Certainly.

4229. Then it is your Royal Highness's opinion, evidently, that the prosecutor and the defendant before a court-martial should stand upon exactly equal terms?—Certainly.

4230. Another suggestion made to this Commission has been that there should be an alteration in the mode of giving the opinion of the Court; and that whereas now the junior officer is called upon to give his opinion first, the opinions should be taken from flanks to centre; and another suggestion has been that they should be handed in writing to the president. Would your Royal Highness agree with either of those suggestions?—I think that it would be a very desirable thing that the opinions should be handed in in writing.

4231. Could your Royal Highness give the Commission any reason for the junior officer being called upon to give his opinion first?—I apprehend that the reason is that it is supposed, according to military usage, that as the juniors take their cue from the seniors, if the seniors gave their opinions first the juniors would be very apt to be careless and to follow suit to any field officer who might give his opinion in the first instance; and, therefore, it has been deemed advisable, in order that there should be no bias of that kind one way or the other, that the juniors should start in giving the opinion or decision at which they might be disposed to arrive. If it was done in writing the whole of that difficulty would be obviated. The president would see each written opinion, and of course there would be no bias, either one way or the other.

4232. With regard to the duties of the president and of the Judge Advocate they have recently been laid down in a more defined manner than hitherto, and in all matters of law the Deputy Judge Advocate's opinion is to be held to be conclusive, and he is not to be allowed to take any part whatever in the prosecution; does that meet with your Royal Highness's approval?—I am very strongly of opinion that that is the right course to be pursued, and I am quite sure that since that has been adopted there has been considerably less difficulty than we had before. When the Deputy Judge Advocate was at the same time a sort of general manager of the whole proceedings beyond the province of the Judge Advocate, he was really prosecutor, and also took part in the defence, and in short it was impossible to define what he was or what he was not. Now, however, he has a defined position, and having that defined position he is responsible that everything in the court is conducted according to law, and he has nothing else to do but to see to that duty.

4233. We have heard it rumoured, but we have not had any evidence, and have not been able to get any evidence upon the subject, that there is a practice on the part of some commanding officers of regiments of exercising influence over their officers with regard to their duties on courts-martial; for instance, it has been stated to us, though we have not been able to trace it farther, that commanding officers sometimes have their officers into the orderly room and animadvert upon their conduct in regimental courts-martial. Has your Royal Highness ever heard of a practice of that kind in the army?—I have not, and I do not suppose that commanding officers would ever do anything of the sort in the sense in which the question is put to me; but I have no doubt that if a commanding officer thought that the officers of his regiment were not well versed in the proceedings of courts-martial, and if something arose out of a court-martial in which some gross irregularity had occurred, he would point out to them that gross irregularity. I think that that may have occurred, and I do not see that that is an unfair proceeding, because, otherwise, I do not see how the officers are ever to be put right if they are wrong; but I do not think that such an animadversion would have any reference to the particular case in which the irregularity occurred.

4234. Has it never come to your Royal Highness's knowledge that commanding officers have been in the habit of what is popularly termed "wigging" their officers for what they have done in a court-martial?—Certainly not.

4235. Part of the evidence before this Commission has tended to render it doubtful whether it is advisable any longer to maintain regimental courts-martial; and it has been suggested that, if we were to recommend a greater power being given to commanding officers, with an absolute power of appeal on the part of the soldier to a court-martial if he was dissatisfied, you might, if you did not altogether do away with regimental courts-martial, at any rate render them much less frequent, would your Royal Highness think such an alteration desirable?—I think that it is very desirable to give more power to a commanding officer, and that of course in itself would make regimental courts-martial much less frequent, but I do not think that it is desirable altogether to do away with regimental courts-martial. The power that you give to a commanding officer must be very well defined and very closely restricted, because I certainly think that you will find that different individuals take very different views of a case. With regard to any offence in his own regiment one commanding officer is very severe in his views, while another is very much the reverse, and the consequence would be that in the same garrison you would have one set of men dealt with very leniently, and another set of men dealt with very severely. If you have regimental courts-martial, there being five members on them, it is impossible that five men should not by mutual control and natural instinct soften down any asperity which might exist in the minds of any one or two in the court; but an individual acts on his own responsibility, and therefore there is nothing to soften, or to direct the mind of an individual in the same way as in the case of a court. Therefore I should be very sorry to see regimental courts-martial done away with altogether, though at the same time if you like to give more power to the commanding officer I think it would be desirable.

4236. Does your Royal Highness think that it would be possible to form a scale of punishment which should produce a greater uniformity of punishment?—I think it could, and I think that it would be desirable to have a scale of punishments if you gave more power to commanding officers. At the same time, as regards a scale of punishments, there would be considerable difficulties about it, because there ought to be great latitude given to individual cases. The same case under different circumstances may require quite different treatment, and if you put down too peremptory a scale you give no sort of latitude for the consideration of incidents which may alter the whole character of an offence.

4237. But a certain latitude, then, being given to commanding officers, and that irregularity of temperament which your Royal Highness has described

existing in different regiments, does it not follow that a greater power of appeal should be given to the soldier if the power of the commanding officer is increased?—I think that if you increase the power of the commanding officer beyond the power which he possesses and exercises now, the soldier ought to have a right of appeal.

4238. At the present moment I believe that the power of appeal on the part of the soldier is only in cases where pay is concerned?—That is so.

4239. Would your Royal Highness object to that power being applied to other cases than those of pay? — Not if you give the commanding officer more power than the power which he possesses now, but for anything within the power which he possesses now I do not think there should be a right of appeal.

4240. The revision of the sentences and findings of courts-martial has attracted a good deal of attention in this Commission, and it appears that there are several cases in which sentences and findings are revised with the view to increasing the punishment; does your Royal Highness think that it is essential that that power should be maintained?—I think that it is impossible to do without it, because there are such extraordinary things, and sometimes such really unaccountable things, done by courts-martial that, unless that power is retained, you may depend upon it that most serious inconvenience would result.

4241. Have not those instances, in your opinion, arisen from the circumstances to which I have adverted, and to which your Royal Highness has also adverted, that is to say, either from the confused nature of the Mutiny Act and the Queen's Regulations, or from the want of military knowledge on the part of the officers?—But it has arisen also from perverseness sometimes on the part of the officers.

4242. Has your Royal Highness ever heard that a revision with a view to the increase of punishment has caused any general dissatisfaction in the army?—Never.

4243. I believe that on all occasions it is according to the Queen's Regulations that the revision should be read out publicly before the men of the regiment to which the party belongs?—Yes.

4244. And therefore the reasons assigned are always explained to the men?—Whenever a court-martial, of whatever description, is revised, the reasons assigned for the revision are always sent down in writing to the president of the court by the revising officer; that applies to general, district, and regimental courts-martial; that is read out on parade when the sentence is read out.

4245. Supposing that the necessity for revision should arise in any degree from the circumstances to which I have alluded, namely, want of knowledge of military aw, in what way would your Royal Highness recommend that it should be corrected; in what way should the examinations be conducted?—I think that if you had a good text book to refer to in delicate cases of evidence, and if you had the Mutiny Act really written in language which was so simple and plain that there could be no mistake, you would find that there would be no difficulty in officers understanding it, and no more would be required than the present mode of asking officers questions upon it, as is done in every regiment of the service at this moment.

4246. It has been suggested that one of the difficulties is the want of knowledge of the laws of evidence, and great stress has been laid upon that; and it has been suggested that it is very desirable that officers should be more instructed than they are now in that particular; would your Royal Highness object to a certain number of officers being prepared in each regiment to conduct courts-martial by a superior instruction in the laws of evidence?—I think that it is undesirable. The more general the information the better, because in our service you must have every officer more or less fit to sit on a court-martial; and, therefore, if you restrict that duty to a certain number of officers you will always be in difficulties as to forming courts. The consequence is that the simpler you make the conduct of military tribunals, and the clearer you put before the officers composing those tribunals the laws of evidence the better it will be, so that such knowledge should be general and not confined to a few. By a text book I mean a special text book on the law of evidence which ought to be officially collected and put into the hands of every officer just as the Queen's Regulations are.

4247. My suggestion, Sir, did not go quite so far as what you have just stated. It was that on every court-martial there should be at least one officer who should have had rather more than common instruction in those particulars. We observe that in the Prussian Army, in the French Army, and in the Austrian Army, there are a certain number of officers who go through a stricter examination than others in military law, and that one of those officers is generally put upon each court-martial?—But are they put on as members or as Judge Advocates?

4248. I think they are put on as members?—If they are put on as members I do not think it would be desirable; because such is the peculiarity of the constitution of individuals that if all the members are on an equality it would be very likely that some of the members would especially wish to go against the opinion of any one of their body who happened to be more learned than the rest. Such member would very likely be looked upon as a pedant by the rest, and they might possibly be biassed against the views which he might adopt if he was put on an equality with them. Of course if he were placed in a position of greater responsibility, and if, like the Deputy Judge Advocate, he had authority to lay down points of law, that would be a different question, but if he is only to be a member of the Court with no greater authority or responsibility than the rest, I think it would be objectionable.

4249. (*Lt.-Gen. Scarlett.*) Does not your Royal Highness think that in common courts-martial the knowledge of the president would be sufficient?—I do; I think that the president from his status in the service ought to be so perfectly competent to give advice on any points which may arise, that there ought to be no necessity for any other member of the court having knowledge superior to that of his neighbour.

4250. (*Mr. Mowbray.*) Would your Royal Highness object to the president being selected from among a list of officers who might be supposed to be qualified by greater experience and greater legal knowledge for that purpose?—I should not object to it on any principle beyond this, that I do not think it is compatible with our service, because our service is very much scattered, and you must take the chance of accident as to whom you could put as president of the court. If you could always deal with a large body of officers, you might select the best qualified men; but where you cannot do so, it is much safer and better to expect a fair amount of knowledge from the whole body, than to take a few and select from them as knowing more than their neighbours, because you cannot always rely upon getting those officers. Taking the case of the West Indies, for instance, there are only one or two regiments in the West India islands and those regiments are generally largely detached; when a court-martial arises, the chances are that you would not have more than one or two officers of those regiments prepared as has been suggested; thus the generality of the courts-martial must be left to be composed of the officers who may happen to be stationed where it takes place. You cannot make the same selections in our service as you would in a large service, where there is always a large combination of officers in a regiment.

4251. (*Lt.-Gen. Scarlett.*) Does not your Royal Highness consider that when an officer has attained the rank of major, or field officer, he ought to be sufficiently instructed to sit as president of a court-martial in common cases upon soldiers?—Certainly, if such an officer is not competent to do so, I should consider

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him either a very obtuse, or a very indolent, or a very inefficient officer.

4252. (*Chairman.*) Does your Royal Highness approve of the present system of courts-martial being constituted by roster?—I think so, for the reason which I have assigned; in fact, I do not see how you could get on without it in our service.

4253. (*Lt.-Gen. Peel.*) I understand your Royal Highness to be of opinion, that if a person in the position of the Auditor, as he is called, in the Austrian service, were to be an ordinary member of the court, and probably of subordinate rank to those above him, he would have no weight?—No; on the contrary, I think the chances are very often that his superior knowledge would rather tell against him.

4254. Either it must be the president who had the power to do it, or else he would be no use at all?—Exactly; it must be either the president, or somebody who has an official status superior to the rest of the members of the court.

4255. Power is given by the first article of the Mutiny Act to the Sovereign to make Articles of War and Regulations, which, provided they conform to the conditions of the Mutiny Act, are to govern the army; by whom are those Articles of War and Regulations framed?—By the Judge Advocate-General in conjunction with the Secretary of State for War and the Commander-in-Chief. These two authorities are only acting in conjunction with the Judge Advocate-General, who is really the responsible officer.

4256. Would it not be in the power of those parties to simplify the Articles of War and Regulations, so as to make them more easily understood?—I should think it would be extremely easy.

4257. Would not your Royal Highness consider that the Judge Advocate General is responsible for the legality of the Articles of War and the Queen's Regulations, as being in conformity with the conditions of the Mutiny Act?—Certainly, and so much so that he is considered to be an officer belonging to the Government for the time being, and he changes with the Government.

4258. In fact, he is the law adviser of the Secretary of State for War and the Commander-in-Chief, is he not?—Certainly, in every respect.

4259. It has been stated that officers are often placed on courts-martial who are not fit to sit on courts-martial; does not your Royal Highness consider the commanding officer of a regiment to be responsible for a junior officer being fit to sit on a court-martial before he is placed there?—Most undoubtedly, and if any fault were found I should blame the commanding officer, and not the officer concerned.

4260. (*Mr. Mowbray.*) Your Royal Highness has stated that you consider the Judge Advocate-General to be responsible for the Articles of War; is your Royal Highness aware that the Articles of War are prepared and edited in the War Office under the direction of the Secretary of State for War?—Certainly, but I apprehend that it is done entirely in conjunction with the Judge Advocate-General.

4261. Some of the changes during the year may be made upon the suggestion of the Judge Advocate-General; some may be made upon the suggestion of the Secretary of State for War, and some may be made upon the suggestion of the Commander-in-Chief, but they are issued under the authority of the Secretary of State for War, are they not?—Yes, but they are drawn, as I have always supposed, in the office of the Judge Advocate-General. Any suggestions that come from the Commander-in-Chief, I will say, would be made to the Judge Advocate-General, and it is the Judge Advocate-General who prepares them for the Mutiny Act and Articles of War; we do not prepare them. They come afterwards to the Commander-in-Chief for his concurrence in the exact wording of them, so far as I know, and then they go back and are laid before Parliament, or are dealt with by the Judge Advocate-General or by the Secretary of State for War when he brings in the Mutiny Act.

4262. They are not prepared in the Commander-in-Chief's office, but is your Royal Highness aware to what extent they are prepared in the Secretary of State's office?—That I know nothing about; I only know that they are not prepared in the Commander-in-Chief's office, but I apprehend that they are drawn in the Judge Advocate-General's office. All I know is that they are not drawn in the Commander-in-Chief's office.

4263. (*Lt.-Gen. Peel.*) Any regulations affecting the discipline of the army would not be drawn up by the Secretary of State for War, would they?—I should have thought not. I should have apprehended that they were drawn up by the Judge Advocate-General, and I cannot help thinking that they should be drawn up by him.

4264. (*Mr. Mowbray.*) Your Royal Highness has stated that you think it would be well to retain the present practice of putting questions in writing; does not your Royal Highness think that the time occupied in framing questions, reducing them to writing, handing them to the president of the court, and then putting them to the witness, enables a prevaricating witness to consider what answer he shall make?—I do not; I think it simplifies matters, and it makes it very easy for the revising officer, and I should think even for the Judge Advocate-General, afterwards to go carefully into every case of a court-martial that comes before him.

4265. (*Capt. Vivian.*) But if those questions were taken down by a shorthand writer would not that have the same effect?—But where are we to get the shorthand writer? That is a matter of expense, and a matter of very important expense. I should not object to shorthand writers at all, as far as the mere writing goes, but nine cases out of ten are so simple that there would be no necessity for it, and it would be a very large item of expenditure, I think, if you consider the number of stations of the British army. It is very well near London and all the large towns, but when you come to distant localities I think you would have some difficulty in making that arrangement.

4266. (*Lt.-Gen. Eyre.*) Would not another inconvenience arise from this, viz., that the shorthand would have to be taken down for the information of the confirming officer before he could possibly comprehend and know all the details of the case?—In my answer to Mr. Mowbray I intended to imply that I did not see, unless you had it rewritten again in full, as it is done now, how the revising officer can judge of the correctness of the proceedings of a trial by court-martial, or even the Judge Advocate-General, to whom all courts-martial go ultimately.

4267. (*Mr. Mowbray.*) What I was suggesting to your Royal Highness was this, that the evidence should be taken down at the time in shorthand, but, as your Royal Highness is aware, where shorthand writers are employed, that evidence is afterwards transcribed and forms part of the proceedings of the trial, which are transmitted to the Judge Advocate-General's office, so that the Judge Advocate-General has the same opportunity of perusing the proceedings where a shorthand writer is employed as where he is not employed?—I suppose that an arrangement of that sort might be made; but I think that the fact of having all those questions put in writing gives time for reflection, and puts aside a great deal of irrelevant matter, which otherwise would get into the trials. Of course the object is to make the trial as simple and as plain as possible, and to divest it as much as possible of technicality and of all subjects which really do not bear upon the case under consideration; and I think those objectional matters are more likely to arise if the questions are put *viva voce* with a shorthand writer taking them down, than if the questions were put in writing and handed to the President, as they are now.

4268. Your Royal Highness has spoken about the course of the proceedings with respect to addressing the court, and your Royal Highness has stated that,

under the present regulations, the prosecutor and the defendant are upon equal terms. Those regulations are found in the Queen's Regulations, 772 to 864: "The officer conducting the prosecution is to be "allowed an opening address. At the close of the "evidence for the prosecution, the Deputy Judge "Advocate will ask the prisoner if he intends to "adduce evidence. If the prisoner then replies in the "negative, the prosecutor will proceed to address "the court a second time, for the purpose of summing "up his evidence, after which the prisoner may "address the court in his defence. At the conclusion "of his address, the Deputy Judge Advocate will, in "open court, sum up the case to the court. If, in "answer to the Deputy Judge Advocate, the prisoner "states that he intends to adduce evidence, he may "open his case with an address before calling his "witnesses. At the conclusion of the evidence he "may again address the court, after which the prose-"cutor will be entitled to a reply. In those special "cases where evidence is allowed in reply, the "second address of the prisoner is to be made after "such evidence, and immediately before the prose-"cutor's reply. The address in open court of the "Deputy Judge Advocate, summing up the whole "case, is to follow the prosecutor's reply. After the "Deputy Judge Advocate has spoken, no other "address is to be allowed, and the court will retire to "consider its finding. If any question should arise "incidentally during the trial, such as upon the ad-"missibility of evidence, the person, whether prose-"cutor or prisoner, requesting the opinion of the "court, is to speak first, the other person is then to "answer, and the first person is to be allowed to "reply." By those regulations I believe the practice of courts-martial has been assimilated as much as possible to the practice prevailing in the ordinary civil courts of the country?—Yes.

4269. So far, then, as the practice goes, there is an equal right of address where evidence is adduced on both sides, but if the case for the prosecution is stated in the court by an officer who is a man of education, and the prisoner is left to make his own address for himself, does not the prisoner to that extent labour under a disadvantage?—I think that the trial of a private soldier is generally so simple that I do not know that he really suffers by that, and I do not think the men themselves feel that they suffer by it.

4270. But some of the cases which may be difficult as to the application of law, or complicated as to the facts, are cases of very great importance to the fortunes of officers; in those cases would it not be very desirable that the party accused should be able to obtain legal assistance?—I should be very sorry to see an officer of a regiment called upon in any shape to take part with the prisoner, because I think it would produce a very awkward feeling in a regiment. It may be quite true that an officer might be only desired to take that upon him as a duty, but I think it very important to maintain discipline, and the fact of an officer of a regiment being appointed to defend a prisoner of the same regiment might lead to some very great inconveniences and irregularities in military discipline, which I think it would be very dangerous to introduce into the army. I would much prefer that the prisoner should have the assistance of some legal adviser than of an officer.

4271. If, in the opinion of your Royal Highness, the maintenance of discipline renders it very undesirable that an officer should be employed to assist a prisoner, does your Royal Highness think that the objection applies to the same extent to a legal adviser being allowed to make a speech, or to read a written address?—I do not think that he should be allowed to make a speech, but I should see no more objection to a legal adviser reading a written address on the part of a private soldier than I should to a legal adviser reading an address on the part of an officer, but I do not think that it would be desirable that an address on behalf of a private soldier should be read by an officer.

4272. (*Capt. Vivian.*) Would you allow a legal adviser to conduct the examination for a private?—I think it would be very undesirable to introduce more legal gentlemen into courts-martial than we have at present, because I cannot help thinking that a military court is as much a court of honour as anything else, and therefore I think that the whole court ought to be conducted upon very wide principles of honour, under legal instruction; but, putting on one side the technicalities of law, which it is impossible for the officers of the army, unless educated as legal men, very fully to appreciate. Therefore the more simple you make a court-martial the better, but there is no objection whatever in grave cases to a soldier having the assistance, if he chooses it, of legal support, exactly in the same way as an officer can have it at this moment, if he chooses. The reason why it is not done is, of course, that a private soldier has not the means of doing it and an officer has.

4273. (*Lt.-Gen. Scarlett.*) Would it not be the case that very often an improper legal person might be employed?—I think it might lead to very great inconveniences. You might have some men of very questionable propriety brought in to take part in courts-martial, and therefore I say the more simple in every sense that you make a court-martial the better.

4274. (*Chairman.*) Evidence has been given before the Commission on the subject of courts of enquiry, would your Royal Highness favour the Commission with your opinion upon the mode in which courts of enquiry are usually constituted, and for what objects?—Courts of enquiry are a sort of preliminary investigation of cases which require to be dealt with by the authorities. When any grave offence is committed which is not a very clear one, a court of enquiry is constituted to ascertain, as far as possible, the circumstances under which such offence has been committed.

4275. A court of enquiry has not the same power, I believe, as a court-martial?—No, there is no evidence taken on oath.

4276. You cannot summon witnesses either, I believe?—You cannot summon witnesses; they only attend voluntarily. The consequence is that you can really only deal with them as far as military men are concerned, because you can give an order to a military man to appear before such a Court, but you cannot give such an order to any civilian.

4277. Are courts of enquiry in practice often followed by consequences to the officers of the loss of commissions? They cannot be followed by any punishment, I believe?—No; but a man may be advised after a court of enquiry, that he had better resign his commission or else stand a court-martial, and he very often prefers to resign his commission.

4278. (*Capt. Vivian.*) Does it happen sometimes that an officer is recommended to leave the service after a court of enquiry has been held, and that upon applying for a court-martial the court-martial is refused him?—Certainly.

4279. (*Lt.-Gen. Peel.*) That is the exercise of the prerogative of the Crown, is it not?—That is the exercise of the prerogative of the Crown. There are many cases where I think a man ought to be removed from the service, but in which he ought not to be tried by court-martial.

4280. In fact he may not have committed any offence for which he could be tried by court-martial?—Exactly. Men may be advised to leave the service, or may be placed on half-pay, who have not committed any offence for which they could be tried by court-martial, but who have proved themselves, to the satisfaction of the authorities, to be utterly incompetent for the position which they have filled. Those men are in consequence either desired to leave the service or they are placed on half-pay by the authority of the Crown.

4281. (*Lt.-Gen. Peel.*) Would you compare it to the case of a non-commissioned officer who, from incapacity, or from any mistake, is reduced to the

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ranks by the order of the colonel of a regiment, or by your Royal Highness?—Yes, just so.

4282. (*Chairman.*) Does it not often follow from a court of enquiry that the officer is removed from the position which he then holds?—The court of enquiry does not remove him at all. The court of enquiry has nothing to do with his removal. The court of enquiry elicits evidence; that evidence goes before the constituted authorities, and the constituted authorities are the people who deal with the case, and not the court of enquiry beyond this; that the court of enquiry has assisted the authorities to unravel some questions which could otherwise not have been clearly and fairly brought forward. No action whatever is taken by a court of enquiry. It is only the authorities that can take action, but they may take action, and do take action after a court of enquiry has sifted to their satisfaction any subject which may have been brought before it.

4283. Does the court of enquiry report anything but the evidence, does it report its opinion?—It may or may not do so. Sometimes they are called upon to give an opinion and very often they are told not to give an opinion, but merely to report the evidence.

4284. Has your Royal Highness any suggestions to make for any alteration of the system of courts of enquiry?—Of course courts of enquiry cannot be considered to be very satisfactory tribunals in one respect, because you cannot force witnesses to appear before them, nor is evidence taken before them on oath; and therefore of course anybody who has to deal with the results of a court of enquiry must be extremely guarded as to the way in which he views the subject matter that is brought before him as emanating from that court of enquiry. But I do not see how you are to do away with courts of enquiry, because I do not see how otherwise you are to elicit evidence upon which you can act afterwards. Surely a court of enquiry constituted of several officers is safer than an investigation by an individual. The investigation must be made either by an individual, the commanding officer, or the constituted head of the department, or by a certain number of officers specially selected. Those officers specially selected are generally selected as being perfectly unbiassed in the question, and, therefore, it is so far more satisfactory than an inquiry by an individual, because the chances are that an individual in making such an enquiry would be much more biassed one way or the other than a court constituted of three or five individuals would be whose only business is to sift evidence and to lay it as clearly as they can before those authorities who afterwards have to deal with the consequences and results of it.

4285. I understand your Royal Highness to say, that if courts of enquiry were done away with the Commander-in-Chief would not have the means which he has now of sifting difficult cases which sometimes do not involve military crime on the part of an officer?—Not only the Commander-in-Chief but any other general officer or even commanding officers of regiments. Courts of enquiry are of various kinds. Courts of enquiry may be ordered by the Commander-in-Chief, or they may be ordered by a General of division or brigade, or they can even be ordered regimentally by the commanding officer of a regiment; but, of course, no action could be taken upon those courts of enquiry, excepting by the Commander-in-Chief, as to the removal of an officer.

4286. (*Capt. Vivian.*) Is notice given to a person who is coming under a court of enquiry of the nature of the charge that is to be brought against him?—Certainly.

4287. Is he told by what evidence that charge will be supported?—No, because a court of enquiry is constituted to make certain inquiries upon a certain subject, whatever that subject may be, that is made known to the person whose conduct is to be inquired into, just in the same way as it is made known to those who are to constitute the board that is to sit upon it. What evidence may come out nobody of course can tell, because that is just what we wish to elicit. It is not like a man being brought before a court-martial. There you know the evidence that you are going to produce, and you give the prisoner an abstract of that evidence; but in the case of a court of enquiry you cannot give an abstract of the evidence which you wish to elicit.

4288. And having full notice of the charge which is to be brought against him, has he also the power to bring any rebutting evidence he can?—Certainly, he has every latitude.

4289. And I believe he has also the power of cross-examining the witnesses brought against him?—Certainly, under the direction of the presiding authority he has a right to cross-examine, or to bring forward any evidence he possibly can. Probably he would not be allowed to bring forward other subjects which really did not bear upon the question under consideration, but beyond that he would have perfect power to rebut any charges that might be brought against him.

4290. The proceedings of courts of enquiry are conducted with closed doors, are they not, and are not public?—They are not public.

4291. So that if any person charged before a court of enquiry is acquitted there is no stain upon his character?—Not the slightest.

4292. (*Lt.-Gen. Peel.*) Is not the report of a court of enquiry a confidential communication to the authority by whom the court is appointed, who becomes responsible for any action upon it?—Certainly; entirely responsible.

4293. Is not that a necessary protection for the members of a court of enquiry; if the proceedings of the court were published in their name they would be liable to an action, would they not?—No doubt of it. The fact is that the court of enquiry is an amplification of the powers of the commanding officer, who inquires into the misconduct of any officers or men of his regiment. If that inquiry is extended and becomes delicate and complicated, it is thought advisable to have it conducted by a body composed of several members, in order to make it more fair and more complete, and less biassed, and then the same action would be taken in consequence of that court of enquiry as would be taken on the evidence given before a commanding officer against any individual where the evidence is simple and plain.

4294. (*Mr. Headlam.*) A court of enquiry, as I understand it, only exists in a case where the constituted authority could, if he so pleased, act without it?—Decidedly.

4295. So that the decision rests solely upon the authority of the responsible officer?—Entirely.

4296. And the board, or court of enquiry, is merely ordered to assemble for his guidance and his assistance?—Just so.

4297. (*Mr. Mowbray.*) In point of fact is there not a confusion of terms in calling it a court at all; and is it not rather a committee assisting the commanding officer in the investigation of a particular offence?—Just so; and I think that probably the use of the word "court" has given rise to some confusion.

4298. (*Marquis of Hartington.*) Has it happened, Sir, that after a court of enquiry has inquired into a case, and action has been taken upon it, the officer has appealed to be tried by court-martial, and that appeal has been refused?—It does not often happen, but it has happened, certainly.

4299. Can you recollect any case in which you think that any hardship has been suffered by an officer under such circumstances?—Not that I am aware of; I am perfectly aware that officers have in some cases imagined that there has been a hardship, but that partly arises from this, that the prerogative of the Crown has, upon the result of some court of enquiry, been exercised, and that the officer has imagined that that exercise of prerogative arose out of that court of enquiry whereas it did not arise out of the court of enquiry, but it arose out of the evidence which the authorities were enabled to collect upon that court of enquiry. Therefore the act was the act of the Crown

through the constituted authorities, but not of the court of enquiry.

4300. Has an officer any right to demand a trial before a court-martial?—No; I do not consider that an officer has any right to demand a trial before a court-martial if the authorities do not think proper to give it to him. There are some officers who have a peculiar constitution of mind, and who are not qualified for the position which they fill; they have shown that want of qualification in various instances not amounting to offences, but instances, I would say of indiscretion. There is nothing to try the officer for, and yet the authorities, and no doubt anybody who understood the case, would say that that individual was not fit for the position which he filled. Then the authority of the Crown comes in and says, "We do not wish to disgrace you in any way, but you "are not fit for the position which you fill at present "and we will put you on half pay." Cases must occur (though they are not frequent, I am happy to say,) where there are officers who have no right to be tried by courts-martial, because there is nothing to try them upon, but yet who ought not, according to common sense views, to be in the position which they happen at the moment to fill.

4301. (*Lt.-Gen. Eyre.*) Exactly as in the case of a serjeant?—Yes, exactly.

4302. (*Capt. Vivian.*) Supposing, Sir, that an officer is brought before a court of enquiry on a special charge with which he is made acquainted, but that he does not know the evidence upon which that charge is to be supported, that he goes away from the court, and that the court reports the evidence to the officer commanding the district, and that that officer reports also upon the evidence to the Commander-in-Chief, and that the officer charged is then placed upon half-pay, might not that officer think that if he had known the nature of the evidence by which this charge would be supported, he might have brought evidence to rebut it, and upon that supposition he might demand a court-martial; and might it not be hard then upon an officer to remove him from the service without consenting to his having an opportunity of producing this evidence which he might have produced to rebut the charge?—I am not aware of any instance in which an officer has not been allowed to bring forward any evidence he could to rebut a charge brought against him. I am not aware of any instance in which an officer was ever brought before any court of enquiry where he has not been told what the subject-matter of the investigation would be, and where he, therefore, had not had ample time to rebut the charge, or the views which might have been held against him on that specific question.

4303. (*Mr. Headlam.*) I understand your Royal Highness to be clearly of opinion that it is desirable that the authorities should have the right of dismissing an officer from the service without trial by court-martial?—I think that it would be impossible to deal with the army without that power, but of course it must be exercised with great discretion, and it is exercised with great discretion. The instances in which we have been obliged to exercise it are very rare.

4304. (*Mr. Russell Gurney.*) Does it sometimes occur that a person demands a court-martial, and that it is refused where the offence for which he is dismissed is a subject which might be inquired into by a court-martial?—I do not think that any such refusal has been made where an actual offence has been committed. I think that wherever there have been such refusals they have almost invariably been in cases where disposition and temper have incapacitated a man from discharging specific duties, unless it had been some very grave offence which it was undesirable should go to the public; but I do not remember that such a case as that has occurred.

4305. (*Lt.-Gen. Peel.*) Is not a confidential report made by the inspecting officer after every inspection, of the capabilities of the officers?—Yes.

4306. And if a man is constantly reported by his commanding officer as being unfit for the position which he holds, it would be absolutely your Royal Highness's duty, would it not, to remove that man from the service?—Certainly, and whenever a man is reported upon in this confidential way it is invariably made known to him, and he is told that he had better mind what he is about in future, because, if those complaints continue, action would have to be taken. To that extent the officer is made aware of the assertions made against him.

4307. If an unfit man, after having been so reported, were put to command the regiment, would not your Royal Highness be responsible?—I think so.

4308. Although he might have committed no actual offence?—Although he might have committed no actual offence.

4309. (*Chairman.*) Does your Royal Highness think it desirable that officers on half-pay should be exempted from the operation of the Mutiny Act?—I think that it is most undesirable. Of late we have had several instances where very disagreeable altercations have happened between officers. I have one case in my mind where both the officers were on half-pay, and another case where one officer was on half-pay, and the other was on full pay. Those officers complained to me, and I have no power whatever to deal with them unless they choose to agree voluntarily to abide by any decision to which I may come. Officers on half-pay are entirely taken away from the jurisdiction of the military authorities, and I cannot understand upon what principle it should be so. They receive Her Majesty's pay, they are allowed to wear Her Majesty's uniform, and they are called officers of the army, but they may commit every imaginable offence, and you see in the public journals, that such and such a person, an officer of the army on half pay, has committed such and such an offence, but there is no way of dealing with him. I do hope most sincerely, that somehow or other, (though how it is to be done I do not exactly know,) some means may be adopted to place officers on half-pay under the Secretary of State for War, so that the Secretary of State for War may hand them over to the Commander-in-Chief, to deal with when questions of this sort arise.

4310. (*Mr. Headlam*). Would you authorize a court-martial to sentence an officer on half-pay to lose his half pay if he was guilty of any improper conduct?—Most certainly.

4311. Supposing that an officer on half-pay was guilty of conduct unbecoming an officer and a gentleman?—I would carry it to the extent of his being deprived of his commission altogether.

4312. Supposing that, when he is an officer on half-pay, he has no military duty to perform, and he misconducts himself in the transactions of the world, how would your Royal Highness propose to deal with the case?—I think that where there is a difference between two officers, whether they are on half-pay or on full pay, and they commit an offence, one towards another, which would not be tolerated, either in civil life or certainly not regimentally, those officers appealing militarily to the Commander-in-Chief, the Commander-in-Chief ought to have the power either of adjusting their quarrel, or of bringing the one or the other before a military tribunal to be dealt with as any other officer on full pay would be dealt with.

4313. But I rather wished to get your Royal Highness's opinion as to a transaction not connected with any military duty. Supposing that an officer on half-pay conducts himself immorally, or brings himself prominently before the public in an improper transaction disconnected with any military duty, would you think it desirable that conduct of that kind should be brought before a military tribunal?—Yes, because if you do not do that, the only alternative is having recourse to the prerogative of the Crown, and striking his name out of the Army List. That you can do now, and the consequence is that, as regards very serious offences, a half-pay officer is in a worse position than if he were on full pay, because he then would be liable to trial by court-martial, and he might escape

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punishment. I have one case in my mind which occurred only very lately, of an officer of high position who was struck out of the Army List.

4314. (*Capt. Vivian.*) That was for a purely civil transaction, Sir, was it not?—It was a purely civil transaction; but it was so gross a case, and it came so prominently before the public, that it would have been an outrage that an officer should have been permitted to continue in the Queen's service, and to wear the Queen's uniform, who had been guilty of so unjustifiable a proceeding.

4315. (*Lt.-Gen. Peel.*) An officer on half-pay may commit an offence, may he not, which would render it impossible for your Royal Highness to bring him back again to serve?—Exactly.

4316. And now you have no power of dealing with him?—Not the least. The very fact of receiving half-pay gives the Sovereign a lien on that officer. There is not an officer on half-pay who could not, to-morrow, be ordered back on full pay; and therefore I cannot see why an officer placed in that position is not to be considered as amenable to military law at all.

4317. An officer on half-pay may be offered a court of enquiry if he chooses in accept it, may he not?—Yes.

4318. But even if the court of enquiry should report against him, is there any power of trying him by court-martial, and removing him from the service by that means?—There is not.

4319. (*Capt. Vivian.*) And I suppose that would be against the general practice to bring the man on full pay for the purpose of trying him by court-martial?—That is a thing which can be done, but it is so extremely objectionable that I would really rather let off a bad case than do that, because you can only bring an officer upon full pay in a regiment, and it is a cruel thing on the regiment. The public do not know how this has arisen. You bring a man upon full pay into the 10th or 12th regiment, and it is supposed that an officer of that regiment has committed some grave offence, whereas he has not committed an offence at all in that regiment, and therefore I think it is a very objectionable course.

4320. (*Lt.-Gen. Eyre.*) Moreover, he might be acquitted and left in the regiment, might he not?—Just so. I see no reason, of course, why those officers should not be considered as under the authority of the Commander-in-Chief for grave offences, just as any officer on full pay is under that authority; but if there should be any constitutional reason against it, I can see no objection at all to their being under the Secretary of State for War, and to the Secretary of State for War having the authority to hand over those officers to the Commander-in-Chief to deal with them in the ordinary course of proceeding. At the same time I think that is a round-about way, and if it could be done by letting them be dealt with according to the common practice, by the constituted military authority, the Commander-in-Chief, I think it would be the simplest plan.

4321. (*Chairman.*) Have you any further suggestion to make, Sir, with regard to the constitution or practice of courts-martial, to which reference has not been already made?—I do not know that I have anything further to suggest.

4322. (*Capt. Vivian.*) With regard to the Deputy Judge Advocates, they are selected, I believe, entirely from military men?—The appointment of permanent Deputy Judge Advocates is a new arrangement, and they have been selected entirely from military men, there being only three at present in the United Kingdom.

4323. Do they pass any special examination in military law before they are chosen?—As it was a new arrangement we were obliged to select the best men whom we could think of at the time, or rather those officers who seemed from their peculiar habits to be best qualified for such a position; but in future, I believe, that it is fully intended that they should pass such an examination.

4324. It has been suggested, Sir, by some of the witnesses who have come here that there should be a legal assessor, a gentleman learned in the law, to assist at all military courts-martial, to advise the court in all questions relating to legal proceedings, so that there might be no illegality in any of their forms. Does your Royal Highness think that that would be a good system to introduce into military courts-martial?—I do not, because, as I have already said, I think that the less law we have in courts-martial the better. The courts should be regulated according to due form, but I consider a court-martial to be as much a court of honour as anything else; and so long as there are military judge advocates, who ought to be sufficiently versed in the rules and regulations of courts-martial to enable them to keep the court within the due bounds of regularity and propriety, I think it is far better to restrict those positions to military officers than it would be to have gentlemen of the legal profession, who would bring all sorts of technicalities into courts-martial, which I am sure it is much better to keep out of them.

4325. That being your Royal Highness's opinion of courts-martial do you think that it would be advisable to restrict the proceedings of courts-martial entirely to military offences, and to hand over civil offences to the civil power?—I think that it would be always better to try all soldiers as much as possible by military law. I think it adds very much to the feeling of discipline which ought to exist in the army if military offenders are brought before military tribunals, and though there are offences of some descriptions which it may be well to hand over, and which are handed over to the civil power, I think that, as far as possible, all soldiers ought to be tried by courts-martial.

4326. But your Royal Highness is aware that there is one character of offence which prevails to a great extent in the army, and which involves a good deal of legal complication. I allude to cases of embezzlement?—Yes.

4327. Does your Royal Highness think that it would be advisable to transfer those cases to the civil authority?—Of course, in very serious instances, where there was a great deal of complication, perhaps it might be desirable, but I do not think that I should like to see many of those cases sent for trial to civil tribunals. I think it would be very much better to keep the civil and military jurisdictions distinct, and to have the proceedings of courts-martial so simple and plain, and the Deputy Judge Advocates so well informed upon these subjects that they should be able to conduct the proceedings of the court without any difficulty or any confusion arising out of it.

4328. (*Maj.-Gen. Scarlett.*) Does your Royal Highness think that in the case of paymasters, where the Secretary of State for War is the prosecutor, it would be advisable to try them by a civil tribunal?—I think that it would be extremely advisable, because those are complicated accounts; there is a great distinction there. Those are questions in which military discipline is very little mixed up. They are pure questions of law, and those had much better be tried by civil tribunals; but everything connected with embezzlements by the soldier where, after all the offence has been committed in his military capacity, I think had better be kept to the military tribunal.

4329. (*Mr. Headlam.*) With respect to cases of violence, some cases have occurred in which it has been both a military and a civil offence, such, for instance, as the case of a man shooting at an officer; does your Royal Highness think that such cases should be tried by a civil or by a military tribunal?—Cases of violence ought, I think, to be tried by a military tribunal.

4330. In those cases in which the offence has been tried by a civil tribunal, do you think that it would have been better if they had been kept for and tried by a military tribunal?—I think that it would have been very much better if, in those cases to which you

allude, the offences could have been tried by military tribunals. I was very sorry that we had to hand them over to the civil tribunals, because I think it is a great point to show that by military law these cases could be dealt with, whereas, if you hand them over to civil tribunals, the men imagine that you have not the means of dealing with them by military tribunals.

4331. With respect to minor crimes, such as stealing from a comrade, is it the opinion of your Royal Highness that those offences also should be tried by military tribunals?—Certainly, because that again is a military offence.

4332. (*Mr. Mowbray.*) Is your Royal Highness aware that it is frequently the duty of the Judge Advocate-General to advise that sentences, in cases of embezzlement, should be set aside from inadequacy of proof?—I know that it is so, but I think that that is very much caused by the Deputy Judge Advocates not having hitherto had sufficient experience of military law to prevent their overlooking certain mistakes which have been made by the Court; but I think that in time all that must come right.

4333. Is your Royal Highness aware that cases of embezzlement, and all cases involving account, are very difficult cases for even a civil tribunal to try, though it is presided over by a judge of great legal knowledge, and great experience in the laws of evidence?—I am perfectly aware of that. The case of a pay serjeant, for instance, who has a complication in his accounts, I think should be tried by a military tribunal; but I would try a paymaster, whose accounts are really departmental, you may say, by the civil tribunal. There is a great distinction between the two; the complication of the pay serjeant's accounts is a military offence, whereas the other is not purely a military offence.

4334. But the complication of the pay serjeant's accounts is a military offence involving questions of account, is it not, which it is very often very difficult to unravel?—But they can never be better unravelled than by military men, because purely military questions are involved.

4335. But so far as it is a question of account it is not a military question, is it?—It is a military question, because the accounts themselves have nothing to do with civil life. The accounts with which this man has had to deal, and in which he has made those mistakes, or those defalcations, have nothing to do with civil life, and therefore I conceive that it should be treated as a purely military crime.

4336. (*Lt.-Gen. Scarlett.*) It is a matter resting entirely between the captain of the company and the pay serjeant, is it not, and not between the Secretary of State for War and the pay serjeant?—Exactly; but when it comes to the paymaster, it is a question of departmental arrangement, which is not purely military, but in which a great deal of the civil element is involved.

4337. (*Mr. Mowbray.*) When you come to the proof of the offence your Royal Highness is aware that it involves the application of the laws of evidence to an extent which it is difficult to expect a court-martial ever to possess?—If the Deputy Judge Advocates are equal to their position, as they ought to be, they ought to be able to keep a court-martial fairly constituted, and who have not any prejudices, one way or the other, within the proper and reasonable bounds of ordinary legal proceedings.

4338. Is your Royal Highness of opinion then, that military men only cognizant of law to the extent to which it prevails in courts-martial would be capable of deciding the very difficult technical points arising on those trials?—I would rather take the risk of their not doing so than that such a case should go to a civil tribunal, because I think that the question of pay accounts is such a delicate matter, and so completely a military matter, that if you made the non-commissioned officers of the army suppose that that is not a military offence, *pur et simple*, you would have a great many more such cases than you have at present.

4339. (*Mr. Headlam.*) I think at this moment that the military authorities are obliged to hand over an offender to the civil tribunal if the offence is cognizable by the civil law, and if the civil authorities demand it?—They are.

4340. Then would your Royal Highness wish for an alteration of the law in that respect, so that if the military authorities wished to retain the offender and try him they should be able to do so?—I think that they should have the option of dealing with the case.

4341. (*Lt.-Gen. Peel.*) Might it not be a case in which the offence would not be a civil offence, but yet involving a very serious question of account?—It might be a very grave offence in military law and not an offence according to civil law.

4342. And of which the military court would be the far better judge?—Yes. Those cases of embezzlement to which I refer in the accounts of pay-serjeants are, I think, really and purely military offences.

4343. (*Lt.-Gen. Scarlett.*) Would you, Sir, try cases of complicated regimental accounts before a general court-martial in preference to trying them before a district court-martial?—Certainly. I think that it would be preferable, because there you would always have a Deputy Judge Advocate who would be in a position to be of use to the court.

4344. (*Marquis of Hartington.*) Even in the cases of paymasters to which your Royal Highness has referred, does it not often happen that military questions are mixed up with the civil questions?—Certainly. It most frequently happens in those cases that you could not separate the two, and that you would still have to try even a paymaster by a military tribunal.

4345. For instance, in the case of a charge of defalcation on the part of a paymaster that may be another charge of insubordination, may there not?—Exactly so, and in that case you could not separate the one from the other, so as to necessitate two trials, which would of course be objectionable.

4346. (*Capt. Vivian.*) Or absence without leave, for instance, might be the military offence?—Absence without leave might be the military offence.

4347. (*Chairman.*) It has been suggested to the Commission with regard to the punishment of non-commissioned officers in the army that they are under greater disadvantages than any other rank, inasmuch as non-commissioned officers cannot be punished without reduction to the ranks. Does your Royal Highness think that it is advisable to retain the present rule in that respect?—I think that some modifications should take place in the present arrangement. First of all, I think that very great latitude should be given, when a non-commissioned officer is not found well qualified for his post, that he should resign it voluntarily, and that his so doing should not in any way involve his being considered ill of by the authorities, merely because upon trial he was found to be less competent for the rank of serjeant, we will say, than for that of corporal, but that is a mere question of resignation. I think that the commanding officer should have the power, which he has not now, of putting a serjeant-major or a quartermaster-serjeant back to the rank of duty serjeant. Many men are equal to being serjeants but are not equal to being serjeant-majors. That is not the case now, and I think his powers should be extended to this extent. I think that you should punish a non-commissioned officer for any acts of irregularity as you do now; but you might somewhat extend that, and for any acts of neglect of duty, which perhaps may arise more from momentary idleness than from any intentional offence, the punishment of extra duti s might be awarded, but I certainly would not go beyond that.

4348. We have had complaints laid before us that when a non-commissioned officer has been reduced to the ranks and is restored to his former position, which sometimes occurs, he loses all the advantages which he would otherwise have had as far as regards the medal, the gratuity, and the annuity. Does your Royal

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Highness think that that is advisable?—Certainly not. I think that it is a very bad arrangement, and that after five years uninterrupted good conduct, as in cases of loss of service, he should be restored again, and be entitled to that indulgence or favour, if he should be otherwise well qualified.

4349. Would you leave that option exclusively with the commanding officer?—After five years clear of any offence as a non-commissioned officer I should let the man be eligible for those advantages.

4350. It has been represented to us by non-commissioned officers themselves that it is a very great hardship upon them to be under the necessity of being tried by courts-martial and reduced, inasmuch as they never get over it in the regiment. It rests against them the whole time they remain in the regiment, and they were very anxious that the commanding officers should have greater power given to them for punishing non-commissioned officers, but that it should not be necessary to try them by court-martial, because it prevented their ever recovering their position; would your Royal Highness recommend any alteration in that respect? — My opinion is that the present regulation acts unfairly, and that it ought to be modified as I suggest. I think that exactly as restitution of service is given to the men after a certain period, restitution to the right to the good-conduct medal and the gratuity should be given to serjeants, even after trial by court-martial, after five years' good conduct. Of course that I merely throw out as a suggestion, but the principle is decidedly most objectionable as it stands now, and I think it ought to be corrected.

4351. Would you think it advisable that as a punishment to a serjeant, reduction to the next rank should be substituted for the present system?—I do not think it desirable; I would largely encourage the practice of resigning the position of serjeant and reverting to that of corporal; a resignation is a very different thing from a punishment on trial by court-martial. Reduction to a lower grade I think is undesirable, but I cannot help thinking that if a serjeant really deserves to be tried as a serjeant, he would not be fit to be a corporal. I think that commanding officers should be instructed where serjeants are found upon trial not to be equal to the position of serjeant, to encourage their reverting to the rank of corporal, without any sort of strain being left on their character in that respect.

4352. (*Lt.-Gen. Peel.*) If corporals were appointed as acting serjeants for a certain time before they were perfectly established in their rank, would you not have an opportunity of testing them by that means?—You would in every well-constituted regiment, but it happens very often the promotion is very rapid, and that you are obliged to make serjeants so quickly that they cannot be long enough, as lance-serjeants, fully to test their capabilities; and in these cases I think that there should be great latitude of resignation. But in the ordinary case of regiments at home they should be able to judge whether or not a lance-serjeant is qualified to be a serjeant, and they should never make a lance-serjeant a full serjeant if they found he was not equal to it.

4353. (*Lt.-Gen. Eyre.*) What your Royal Highness recommends is a practice which was forbidden by order, viz., allowing to resign?—Yes, but I would modify this regulation.

4354. Would you approve of fines being imposed in certain cases on non-commissioned officers, giving them the power of appeal?—I don't see what you are to fine them for. You cannot fine a man for a military offence, excepting for drunkenness. It is suggested that there should be fines for drunkenness, and that, I think, would be desirable. You would not like to have a non-commissioned officer drunk three or four times; he would, in that case, not be fit to be a non-commissioned officer. You might constitute fines for the men for such an offence, but I do not see how you could do so for the non-commissioned officers, and still leave them non-commissioned officers.

4355. The majority of cases in which non-commissioned officers are defaulters are cases of absence, and perhaps of a little appearance of drinking. Do you think a system of fines could be applied in such cases as those?—Continuous absence for instance in a non-commissioned officer is a very grave offence, and if he commits that, he sets a very bad example to the men, and I should think he was not fit to to be a non-commissioned officer.

4356. (*Lt.-Gen. Scarlett.*) Would you think, Sir, that a non-commissioned officer under punishment would have due authority over the men?—I think his authority is weakened, but at the same time I am one of those who think that you should never try non-commissioned officers if you can avoid it. I should be much more disposed to reprimand a non-commissioned officer than to punish him.

4357. Would you not think that a non-commissioned officer who is not to be governed by reprimand, or by advice from his superior officer, is not fit to be a non-commissioned officer?—I think he would not be fit for his position.

4358. (*Chairman.*) You alluded, Sir, just now to the imposing of fines for the punishment of drunkenness. With regard to the rule which is now in force, that a soldier for the fourth time of drunkenness must be tried by a court martial, do you think that it would be advisable to substitute for that a fine?—I think that it would be most desirable; in fact a committee which has considered this subject has put forward a scheme, which I believe is before this Royal Commission, and the sooner you adopt that scheme the better I shall be pleased. I am very glad to have had that question put to me because I wish to explain that the reason why we were obliged to adopt that rule of trying men for every fourth offence was that it is in the Mutiny Act and the Articles of War, and yet there was great latitude given. The consequence was that some regiments never tried the men for the fourth time of drunkenness, while others tried them systematically the fourth time; and the result was that, in the same garrison, you had regiments in which the punishments for that offence were inflicted on different systems, and nothing is so objectionable as that. The men get together and talk these matters over, and whereas one set of men are complaining of their commanding officer who is strict, the others say: "We are allowed to do anything we like;" and that in itself may produce an uncomfortable feeling. You must either, therefore, adhere to the strict letter of the law as laid down, or you must relax that strict letter of the law, and I am all for relaxing it, as has been suggested by the imposition of fines, because I believe that the trial of a man by court-martial for drunkenness does not deter a man from getting drunk, whereas if you fine him it must deter him from getting drunk, because he does not get the same amount of pay, and therefore he has not the same means of getting drunk. Another thing is that if you have so many courts-martial you make the good man do the work of the bad man, whereas if you fine him he does his own work and yet he gets punished.

4359. We have had under consideration the question whether or not it would be possible to substitute any punishment for that which has just been done away with by Act of Parliament, namely, corporal punishment; is it the opinion of your Royal Highness that the discipline of the army can be kept up, unless some other punishment is substituted for corporal punishment?—That we can only judge of by the result. I think that as you have done away with corporal punishment we ought to have the power of acting upon the spot in serious cases, and I should suggest that whenever a man commits an offence with violence, I would do what is done in the navy, that is to say, I would put him in irons for 24 hours, and leave him there, quite irrespectively of any other punishment; and after that 24 hours are over I would bring him up and deal with him by putting him aside for a district or a general court-martial.

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Then I would largely increase the power of giving solitary confinement. The thing that a soldier most dislikes is solitary confinement; he cannot bear it, and what we want is short and sharp punishment. Our punishments are all a great deal too long, and the men only get listless and idle, and there is not the proper discipline which is required. They cannot maintain the discipline in the associated rooms which we have now, and the more cells we have the more we can keep the worst characters apart from the best men, to the great advantage of the service. I would put a man for 24 hours in irons on bread and water if he committed himself by striking an officer or non-commissioned officer, for instance, without reference to any other punishment, merely that he might collect his thoughts and restrain his violence.

4360. (*Marquis of Hartington.*) That would be an innovation, would it not?—It would be a new thing.

4361. It is not the case now that a man can be imprisoned in irons without trial, is it?—No; but I would not let it extend beyond 24 hours, because I think no man ought to be dealt with instantaneously, without being dealt with quietly and calmly the next day; but a gross act of violence I should immediately deal with by showing the regiment that the man would be put in irons and left there for 24 hours.

4362. (*Mr. Headlam.*) Would you give this power to the commanding officer?—To the person in command wherever the thing happened; to the commanding officer of the regiment, or to any other superior authority.

4363. (*Lt.-Gen. Eyre.*) That is simply adopting the naval practice?—Simply adopting the naval practice.

4364. (*Mr. Headlam.*) Taking the case of a man who is insolent when brought before a court-martial, how would your Royal Highness propose to deal with that?—There is no reason why you should not deal with him exactly in the same way, by putting him in irons for 24 hours on bread and water, until you decide how to deal with him.

4365. Would you give that power to the president of a court-martial, in the case of a prisoner being insolent?—I would give that power to the president. If a man in a court-martial threw his cap at the president, which I am sorry to say is sometimes done, I would put him in irons for 24 hours with bread and water, and send him up to a higher authority to be dealt with afterwards.

4366. (*Lt.-Gen. Peel.*) That would be for an act of violence and not for impudence?—Not for mere impudence.

4367. (*Mr. Headlam.*) Supposing that the man used violent language, how would you deal with him?—I would not adopt those measures unless some act of momentary violence were committed, such as throwing any object, or attempting to kick the authority, whatever authority it might be; but in such cases I would give that power to the president of the court-martial, if the act was committed before a court, or to the officer commanding, if it was in his presence.

4368. (*Chairman.*) Are there the means, Sir, at the present moment of exercising the punishment of solitary confinement generally throughout the army in Great Britain?—In some garrisons there are the means, but nothing like what there ought to be. There are not nearly cells enough.

4369. What is the present practice when there are not cells enough, and a soldier is sentenced to solitary confinement?—They cannot carry out that sentence where there are no cells.

4370. Then what is the process in that case?—Then they must revert to the associated room system and the ordinary punishment.

4371. Are there many instances in England, Ireland, or Scotland at the present moment, in which it occurs that soldiers get off the punishment for the want of the means of carrying it out?—I think there are cells in most instances, but I do not think they are appropriate for the purpose of carrying out solitary confinement; and I think you want a very much better class of cells for solitary confinement. There are cells, and to a certain limited extent you can carry out the punishment, but not to the extent that I should like. It cannot be carried out as systematically as it ought to be, and as I think would be desirable.

4372. (*Lt.-Gen. Scarlett.*) In so large a garrison as Aldershot it would be very desirable, would it not, to have the proper means of carrying out that punishment?—It would be most desirable. I believe that at Aldershot it would be found that they could not carry it out, because there are no means of doing so.

4373. What is the practice which is adopted there?—If a man is not sentenced to penal servitude he goes into the associated rooms, and however grave his offence may have been, though he is classified, he is still put into the same room as the common ordinary petty offenders, and those men are brought into contact with this very bad character, which I consider to be highly objectionable.

4374. Then if this Commission were to recommend the mode of confinement which your Royal Highness has just now declared to be in your opinion desirable, it would be impossible under the present circumstances to carry it out efficiently, would it not?—It would be impossible to carry it out to the extent to which I should wish to see it carried out, certainly.

4375. (*Lt.-Gen. Peel.*) Prison military discipline is very much more severe now, is it not, than the ordinary army discipline?—Certainly.

4376. There is a power of inflicting corporal punishment in prisons, is there not?—Exactly, but I do not think that military prison discipline is sufficiently severe now. I believe that many men go into a gaol who do not care a straw about going there, and that I think, arises out of the system of associated rooms. I think that if you had more solitary confinement, and if it could be efficiently carried out, you would find that men would be much less disposed to go into prison than they are.

4377. If a man is guilty of insubordinate conduct, accompanied with violence in prison, there is the power now of inflicting corporal punishment, is there not?—According to the Prison Discipline Act there is such a power.

4378. (*Chairman.*) Have you any objection, Sir, to the system of discharging soldiers being extended to the commanding officer?—I would not give that power to a commanding officer at all; I think that would be a most objectionable thing. If it is to be extended it can only be extended under the authority of the Commander-in-Chief. As to giving the commanding officer power to discharge any man he likes, I should think it extremely objectionable.

4379. Should you object to the system of discharge being carried out by proper authority to a greater extent than that to which it is now carried out?—I should object to it unless you can mark a man, because otherwise a man is discharged from one barrack yard to-day, and he will go and enlist in another barrack yard to-morrow.

4380. It has appeared in the evidence given before this Commission that the really bad characters in a regiment are very few in number, is that the case?—They are very few.

4381. It has been stated that there are in most regiments some characters so bad that it is very advisable to get rid of them, but that the commanding officers have not hitherto been able to get rid of them, and there seems to be a wish on the part of commanding officers that greater facilities of some kind should be given to get rid of bad characters, could your Royal Highness suggest any means by which such men could be discharged?—I quite agree with those commanding officers that it would be desirable to get rid of such men, provided they are marked, but if those men are not marked I should be obliged to say, "I am very sorry, but I cannot allow "those men to go," because those are the very men who go immediately and re-enlist merely for the sake

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of getting the money to put in their pockets. They are perfectly reckless; they have no feeling of shame, or honour, or anything else; and therefore when they are dismissed as bad characters from one regiment, unless they are marked, they re-enlist immediately. A recruiting serjeant cannot inquire into every man's character when he is recruiting, he takes any man that comes up to him, and very often the finest men in a regiment are those bad characters. They would re-enlist again in another regiment, and behave equally ill, and every time they re-enlist they add certain means to their own by getting the bounty and a free kit, and everything of that kind.

4382. I believe, Sir, that under the present law a man cannot be marked with the letters "B. C." unless he has been sentenced by a court-martial?—He cannot. The man must be tried before he can be marked with the letters "B. C.," and then the sooner you can get rid of him the more pleased the authorities would be.

4383. (*Lt.-Gen. Eyre.*) Would your Royal Highness be glad to see the Legislature give more power for marking men, and getting rid of them?—I should, decidedly, as regards getting rid of bad characters. In the case of those bad characters I think that every facility should be given for getting rid of them.

4384. (*Marquis of Hartington.*) Under what circumstances are men discharged now?—They are discharged after being marked with the letters "B. C."; and they are generally sentenced to be discharged for some serious offence, such as theft or other offences of a grave character, which you will find in the Articles of War; and we also discharge men who, even supposing they have not committed an offence cognizable by a court-martial in that particular instance, have been tried before and have been marked, which may have been the case.

4385. But do you not now under any circumstances discharge a man without trial?—We discharge very bad characters, but they must have been tried before. You could not discharge a man without his having been tried; but you may not have tried a man at that moment. You may apply for a man to be discharged who has come out of gaol, and who has not been sentenced to be dismissed; but you could not discharge a man who had not been tried.

4386. A man can be discharged by the Commander-in-Chief with the sanction of the Secretary of State for War, can he not?—Yes.

4387. And not without that?—No.

4388. (*Lt.-Gen. Peel.*) But you cannot mark a man without the sentence of a court-martial?—You cannot.

4389. (*Chairman.*) It has been suggested that photography might be used instead of marking. Would that, in your Royal Highness's opinion, be an efficient substitute for marking?—I am all for the marking, and it is the only security that I can believe to exist.

4390. (*Mr. Headlam.*) Is it found in practice that the mark is successful or that it wears out?—They have means of partially obliterating it by tattooing over it, but a medical officer must be very neglectful, I think, if he overlooks it. This marking is called "branding," which I cannot help thinking is a very unfortunate expression. The expression "branding" seems to imply the infliction of some bodily pain, but I believe that the marking is no more than most sailors do to themselves as a matter of amusement, though of course it is done in a specific way. I think there is a prevalent idea that there is something physically painful and distressing in the process; but I believe there is nothing distressing whatever in it, and that it is a mere security, just as you would vaccinate a man or a child for the small pox or anything else.

4391. (*Marquis of Hartington.*) Would your Royal Highness wish to have the power of marking a man without his having been tried by a court-martial?—I would not, but I would extend the power of courts-martial in this respect to all grave offences.

4392. (*Chairman.*) At the present moment the men are paid daily, and I believe they look upon it as a great privilege to be paid weekly; would your Royal Highness consider that it might be desirable, as a special privilege, to pay certain of the men weekly, and, in cases where a mild punishment was required, to deprive them of that privilege and to pay them daily again?—The only objection to it is that it gives a man a large sum of money in his possession at once, and the fear is that many of them are very careless fellows, who would either lose it or spend it in drink, or in some other way. Otherwise there would be no objection to it at all, and of course if you gave it as an indulgence to good men, and deprived the more reckless men of it, in that respect you might use it as an indulgence; but I think you ought to do it under restrictions, because otherwise it might entail the commission of crime.

4393. (*Lt.-Gen. Scarlett.*) I believe your Royal Highness is aware that formerly the men were paid monthly?—Yes.

4394. Was not the reason why that was left off was that there was a great deal of debauchery for the next four or five days after they were paid?—Just so; and on that account it is decidedly better to pay an irregular man daily, but married men, for instance, and men of steady habits, as an indulgence, might be paid weekly, and I should see no objection to it.

4395. (*Chairman.*) It has been suggested that a system of permanent courts-martial might be established in the various districts of this country; does your Royal Highness see any objection to that?—I think it would be very objectionable, because I do not see how you could possibly constitute them in our service. That is one of those things which may apply to continental armies, but which do not apply to ours; because, scattered as we are, I do not see how you could constitute permanent courts-martial under such a system; and, under these circumstances, I think the more you extend the knowledge of military law to the whole of the officers instead of confining it to a few, the better.

4396. You have, I think, an equal objection to permanent presidents of courts-martial?—On the same ground I think that that would be very objectionable.

4397. (*Lt.-Gen. Scarlett.*) From your very great experience of the army, is it the impression of your Royal Highness that justice is generally done by courts-martial?—I think so, most assuredly; and I think that the feeling of the army is that justice is done. If anything I think that the men are much more apt to get off from irregularities in courts-martial than they are to be punished unfairly. If there is a feeling in courts-martial it is more towards the side of leniency than towards the side of severity; in fact I do not know an instance where a court-martial has been complained of as to its severity, but I have known instances where the law has failed and where one has had cause to regret it, because one has felt morally certain that an offence has been committed, but that it has not been dealt with, because of some irregularity which has occurred which ought to be avoided if possible.

The witness withdrew.

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LIEUT.-GENERAL SIR EDWARD LUGARD, G.C.B., called in and examined.

4398. (*Chairman.*) You are Under Secretary of State for the War Department, are you not?—I am.

4399. How long have you held your present office?—I have been in the War Office nearly 10 years.

4400. What posts have you filled before?—I was Adjutant-General of the Queen's troops in India.

4401. For how long?—I was in the Adjutant-General's department between 13 and 14 years.

4402. And how long were you commanding officer of a regiment?—I never commanded a regiment.

4403. In the posts which you have filled have you had any peculiar means of looking into the system of courts-martial?—Yes.

4404. Does the system in India vary in any important particular from the system which is carried on here? — Not so much since the appointment of Deputy Judge Advocates in the districts in England, but it did before, because in India each district had its Deputy Judge Advocate, who conducted the proceedings of courts-martial, and to whom a general officer referred the proceedings of all district courts-martial before he approved of them, and whose opinion he got upon the cases.

4405. Has the system in India now been reduced to exactly the same system as is in force here?—I believe that it is very nearly the same.

4406. Is a court-martial in India, for instance, composed of the same number?—Yes.

4407. It is under the same regulations as regards Deputy Judge Advocates?—Yes.

4408. Are the duties of a Deputy Judge Advocate in India similar to those of a Deputy Judge Advocate in England? — Such a question could be better answered by the Judge Advocate-General. It is only a question affecting the system generally that would be referred to the Secretary of State for War.

4409. In your experience has any great inconvenience arisen in India from the distance from head-quarters at which the courts are held?—None that I am aware of.

4410. Under any circumstances is the declaration of the result of a court-martial in India postponed until the decision of the Commander-in-Chief or the authorities at home is known?—It is postponed until the decision of the Commander-in-Chief in India is known.

4411. Has he exactly the same power as the Commander-in-Chief here?—He has greater powers.

4412. Under no circumstances is it necessary to refer home in any particular connected with a trial by court-martial in India?—In none. Sentences of courts-martial have been referred home and of course the Queen on the advice of the Judge Advocate-General or the Commander-in-Chief at home has the power to interfere in any decision of the Commander-in-Chief in India.

4413. In what way?—The Queen may grant Her pardon.

4414. But can the Queen revise a court-martial?—No.

4415. It is merely the prerogative of the Crown in granting pardon which She has in all cases?—Either granting a free pardon or commuting the sentence, such as allowing an officer the price of his commission.

4416. Are there any suggestions which you have to make with regard to courts-martials in India, either as to the practice or the constitution of those courts?—I think it would be advisable to have fewer officers, and if some arrangement could be made so as to have fewer courts-martial I think it would be better.

4417. In what way do you suggest that that end should be attained?—I would treat many of the offences by fines, giving to commanding officers to a certain extent, for instance, the same power as commanding officers at present have on board ship of stopping 28 days' beer money or something of that kind. Then I would give to the commanding officer assisted by the two senior officers of the corps still greater power so as to obviate the necessity of having courts-martial, because I think that the frequency of courts-martial does away with their effect.

4418. Does that observation apply generally both to the army in India and to the army at home?—Yes.

4419. You do not suggest that greater power should be given to the commanding officer, but that it should be given to him in conjunction with the two senior officers of the regiment, and you think that in that way the necessity of holding courts-martial would be obviated?—Quite so. I would give the commanding officer greater power than he has now, that is to say that I would allow him to fine to a certain extent for acts of drunkenness, but for repeated acts, where the amount of stoppage should be greater, and for a more lengthened period, it should be awarded by the commanding officer in conjunction with the two senior officers.

4420. Would that observation again be applicable to the whole army?—Yes.

4421. For the present confining your observations to India, where you have had so much experience, are there any regulations which you would recommend in India which you would not also recommend in this country?—None.

4422. Does the peculiarity of the service in India require that courts-martial there should be constituted in any other manner than they are here?—Not in the least.

4423. Are you aware whether any change has taken place since you left India in the system of courts-martial?—I think no change has taken place.

4424. Are you in such a position that you think you must have known of any material alteration of the system there, if any such alteration had taken place?—I think so, from my position and also from the interest which I take in India.

4425. And you believe that in answering the questions which I have just now put to you your answers apply to circumstances still existing in that country?—Quite so. I have read several courts-martial lately which have been referred by the Horse Guards to the Secretary of State for War, and I have seen nothing different in the procedure in those cases from the procedure which was adopted in my time.

4426. Did I rightly understand you to say that you think that general courts-martial in India should be reduced in number?—Certainly.

4427. What number would you suggest?—I should think that seven would be quite sufficient.

4428. Is it difficult in India to obtain a court-martial consisting of more than seven officers? — It is not generally difficult. Most of the stations where European troops are are large, and there is not much difficulty, though there may be some difficulty at out stations; but generally I think that the number is cumbersome, and that seven are quite adequate for the purpose.

4429. Are the stations in India so distant from head-quarters that it sometimes requires a considerable time to obtain the revision or confirmation of a sentence of a court-martial?—No, and the delay is less now than it was in former times, because of the railways.

4430. But still there are districts in India, are there not, where regiments are very remote from head-quarters?—There are, but I do not think that much inconvenience arises from that.

4431. From your recollection, what occurs to you as being the most distant station from head-quarters in India?—It depends upon where the head-quarters might be at the time. If the head-quarters happened to be in Calcutta, of course the troops at Peshawur and in the North-western Provinces are most distant from head-quarters. If, again, the head-quarters happened to be at Simla, then the south and the north are about equidistant.

4432. What should you say is the time which it requires to confirm a court-martial at Peshawur from the head-quarters at Calcutta?—I am scarcely in a position to say what time would be required now, but it would be a very short time at any rate. I doubt whether any delay arises from the distance. I expect that where it occurs it is owing to the reference which it is necessary to make. Very often there may be some irregularity, which the Judge Advocate-General at head-quarters points out, and it requires to be considered and referred back to the regiment, but

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from the mere distance I should say that there is no great delay.

4433. What should you say is the longest time which a soldier acquitted of a charge by a general court-martial has to remain as a prisoner before he gets his discharge?—A district court-martial is confirmed or disapproved by the divisional General on the spot, but a general court-martial must be confirmed from head-quarters. I can hardly say what the time would be, but it would be a very few days.

4434. How would it be transmitted?—By post.

4435. Do you believe that any great inconveniences arise from the delay?—Certainly not.

4436. Have you ever heard of any grievance from a prisoner having been kept long in prison owing to the distance from head quarters?—Never; and I know that at the present time, since the electric telegraph has been introduced, the decision, when it is an acquittal, can be communicated with very little delay.

4437. Are the quarters in India so constituted that there are the means of inflicting punishments awarded by courts-martial at every station at which a regiment can be quartered?—I cannot state that, because there have been so many changes within the last few years. Cells have been built, and in fact they are changing every year.

4438. When you were in India had they the means of inflicting those punishments?—Generally speaking, they had.

4439. Supposing that corporal punishment had been abolished during the time that you were in India, had you the means of preserving the discipline of the army by means of cells and other punishments to an extent which you thought sufficient for preserving discipline?—Certainly not.

4440. And unless there has been a great change, you do not think that there are the means now?—Quite so.

4441. Do you think that that observation applies more to India than it does to this country?—I think so.

4442. And do you think that, now that corporal punishment has been abolished, more attention must be paid, in that country especially, to the means of inflicting other punishments?—Quite so.

4443. Do you believe that it will be a very expensive arrangement to carry that into effect?—I think not; they have now in contemplation the building of a military prison.

4444. Would it not be necessary to have a military prison connected with each district?—Yes, but I believe that they propose to have a large military prison in one of the sanitaria.

4445. (*Lt.-Gen. Peel.*) Are there not two distinct military laws in operation in India; the one referring to the management of the native army, and the other to the management of the European troops in India?—The native troops are under a different law, but the officers are under our Mutiny Act.

4446. Flogging having been abolished here, it did not necessarily follow, did it, that it was abolished as regards the native army?—No; they are under their own Articles of War.

4447. (*Chairman.*) Then I understand that you think that unless very great changes have taken place in India, there would be considerable difficulty in keeping up the discipline of the army now that the punishments are altered, unless a corresponding alteration should take place in the means of inflicting punishments?—That is quite my opinion.

4448. Do you believe from the communications which you have had with Indian officers that that is the general opinion?—I am sure it is.

4449. And do you think that the abolition of corporal punishment is likely to have a much greater effect in India than it has in this country?—I think it will have.

4450. From your knowledge of India, seeing that it is now the law that there should be no corporal punishment, could you suggest any other system of punishment which could take its place?—The only thing is solitary confinement.

4451. But have they the means of inflicting that?—They have not at some stations, but they must provide the means.

4452. Are there any punishments which are peculiar to that country?—I think not.

4453. Supposing that they had the means of inflicting solitary confinement as a punishment in India, do you believe that it could be safely put in practice in the same way as it can be in this country?—Yes.

4454. Do you think that the difference of climate would have any effect?—Of course lengthened periods of solitary confinement would affect men of different constitutions; but, generally speaking, I should say that the difference of climate would not make any very material difference.

4455. Is it possible in India to carry out the punishment of penal servitude as it is carried out in this country?—It is not, and it is with that object that they are now contemplating, or have been for years contemplating a military prison.

4456. Is it possible at all times in India to carry out the punishment of shot drill?—No; at certain seasons of the year it is almost impossible.

4457. Is it possible at all seasons of the year to carry out hard labour in out-of-door work?—Certainly not.

4458. Then I understand you to say that the military punishments in India are reduced to a very small number?—Yes; and I think therefore that it will be necessary to establish a system of fining the men and mulcting their pay much more extensively than has been the case hitherto.

4459. Do you think that in India it would be possible to reduce or do away with regimental courts-martial?—I am a great advocate for doing away with as many courts-martial as you possibly can; and by giving more extended power to the commanding officer associated with the seniors of the regiment, I think that you might do away with regimental courts-martial.

4460. Would you, in giving greater power to the commanding officer of a regiment, think it safe in India to give to the soldier the power of appeal to a general court-martial?—Certainly.

4461. In every case?—In every case.

4462. You would not confine it as it is now confined merely to cases in which he is deprived of pay?—You might give a liberty of appeal to a regimental council, if I may so term it; that is to say, the commanding officer and the two senior officers associated with him.

4463. You would prefer, as I understand, that in doing away with courts-martial that authority should be given to what you term a regimental council, that is to say, the commanding officer and the two senior officers, rather than that the commanding officer should have the power?—Certainly. If you could select your commanding officers, and have them of the same calibre as to intellect, it would be all very well; but there are a certain number who run up to the top of the tree very quickly who have not been accustomed to subordination, and you cannot trust to their discretion.

4464. You would be opposed then to giving any increased power to commanding officers individually?—No, I said before that to a certain extent I would give a commanding officer increased power; I would give him the same power with regard to fining which can be exercised now on board ship, where I think that the commanding officer is allowed to stop 28 days' beer-money.

4465. (*Lt.-Gen. Scarlett.*) Would you allow an appeal to a regimental court-martial or to a district court-martial?—If you do away with regimental courts-martial, of course the appeal must be to a district court-martial.

4466. Would you allow an appeal against the colonel to a captain and two majors in that case?—

Certainly not; that, in my opinion, would sap discipline altogether.

4467. Do you think that a regimental court-martial now rather interferes with the authority of a colonel in a regiment?—No; though it has that effect sometimes, certainly.

4468. (*Lt.-Gen. Peel.*) But regimental courts-martial are held by the order of the colonel of the regiment, are they not?—They are held by his order, but then they exercise an independent discretion; and if there is not unanimity between the commanding officer and the president or the members of the court-martial, you very often find his authority set aside.

4469. (*Lt.-Gen. Eyre.*) In a country like India, are there not occasions when a regiment may be very isolated and distant from a garrison, and when, if there was nothing but a district court-martial to resort to, the want of a regimental court-martial might be seriously felt; and although, as a general rule, you might dispense with them, would it not therefore be desirable to retain the power, under peculiar circumstances, of holding regimental courts-martial?—Regiments are not detached so far but that you could send two or three officers from the nearest station, so as to form a district court-martial. It would take away the objection of appealing to the regiment against the decision of the commanding officer, which is always a bad thing. If the decision of the commanding officer is to be appealed against, there should be fresh blood brought in,—there should be men from other regiments,—it should not be a regimental court entirely.

4470. (*Chairman.*) Is there, generally speaking, any greater difficulty in assembling courts-martial in India than there is in this country?—Certainly not. In large places like Shorncliffe, you can assemble a court-martial with great ease, and the same in large stations in India; but where a regiment is quartered by itself in this country, there is the same difficulty in that respect as there is in India.

4471. Could you state generally what the expense of a court-martial in India comes to?—I could not; it never came under my notice.

4472. (*Lt.-Gen. Peel.*) If it is proposed to make any alteration in the Articles of War, either by the Secretary of State for War or by the Commander-in-Chief, are not those alterations always submitted to the Judge Advocate-General before they are included in the Articles of War?—Certainly.

4473. (*Mr. Mowbray.*) By whom were the Articles of War prepared and edited?—We look upon the Judge Advocate-General as responsible for the Articles of War with the Horse Guards.

4474. They are prepared in the Secretary of State's office, are they not?—Not the Articles of War; the Mutiny Act is.

4475. By whom are they prepared?—They are prepared in the Judge Advocate-General's office, and the alterations are really made in the Judge Advocate-General's office, and very often on the direct suggestion of the Judge Advocate-General. The Articles of War are the Queen's rules for the better government of Her Majesty's army, and they emanate, as regards discipline, from the Commander-in-Chief, who, in the first instance, consults with the Judge Advocate-General, or the Judge Advocate-General consults with the Commander-in-Chief in regard to trials and awards of courts-martial. Any alterations or amendments which they consider requisite are submitted for the consideration of the Secretary of State for War by the Commander-in-Chief or the Judge Advocate-General; and if those alterations or amendments are approved, the Judge Advocate-General is then instructed to insert them in proper and legal form. That is the mode of proceeding.

4476. Then all the alterations for the year are submitted for the consideration of the Secretary of State for War?—Yes, either by the Judge Advocate-General or by the Commander-in-Chief. All articles touching finance and the civil departments of the army emanate from the War Office, and they undergo exactly the same routine. They are sent to the Judge Advocate-General.

4477. And does not the final approval rest with the Secretary of State for War?—The Secretary of State for War is responsible for everything.

4478. (*Mr. Headlam.*) The Mutiny Act is always brought in by the Secretary of State for War, is it not?—Quite so.

4479. And of course if one office is more responsible than another it must be the Secretary of State's office which is responsible?—Quite so.

4480. (*Mr. Mowbray.*) The insertion or the non-insertion of any change proposed in the Articles of War for the ensuing year ultimately rests with the Secretary of State for War, does it not?—Certainly. He can object to anything which he may consider undesirable.

4481. For instance, are you aware that a correspondence which the Commission have before them, relating to the mode of punishment for drunkenness in the army, contains a proposition submitted by the Adjutant-General to the Secretary of State for War, with a letter from the Judge Advocate-General enclosing a copy of three Articles of War altered to carry out certain changes proposed by the Horse Guards?—Yes; but that was a question of finance, and therefore the Secretary of State for War naturally must decide upon it. As I stated before, I think matters of finance would be entirely controlled by the Secretary of State for War.

4482. It is only indirectly and ultimately a question of finance; but is it not primarily a question of punishment for drunkenness?—So far it affects discipline, but you cannot touch a farthing of a man's pay without the authority of the Secretary of State for War, and therefore that makes it a question to be dealt with by the Secretary of State for War.

4483. Then it is a mixed question of discipline and finance?—Quite so. Then as regards discipline, the Commander-in-Chief gives his opinion, and asks the Secretary of State for War for his concurrence in the financial part of the business.

4484. Then in reply the Secretary of State for War says that he is reluctant to make such a change at the moment, but that Her Majesty on his advice has appointed a Commission to inquire into the subject. Does not that show that the adoption of the change rested with the Secretary of State for War?—Of course it does. If an officer is cashiered, the Secretary of State for War is made responsible for it; he is held responsible for everything that occurs.

4485. Do not the Articles of War for the year bear the sign manual?—Yes.

4486. By whom is the sign manual obtained?—By the Secretary of State for War.

4487. Then it is upon the advice of the Secretary of State for War that Her Majesty affixes the sign manual to the Articles of War for the year?—Quite so; but that has nothing to do with the framing of the articles, or with the question as to who is the person responsible for them.

4488. The first section of the Mutiny Act provides also that the Articles of War, as soon as may be after the same shall have been made and established by Her Majesty, shall be transmitted by Her Majesty's Secretary of State for the War Department to the judges of the superior courts. The ultimate decision as to the adoption or otherwise of any change in the Articles of War rests with the Secretary of State for War, does it not?—The final approval certainly does.

4489. The Secretary of State for War also obtains the sign manual to the Articles of War from Her Majesty, does he not?—Yes.

4490. And it is his duty to transmit copies of them when made and established to the judges?—Yes.

4491. (*Mr. Headlam.*) Is it not in this way:—the Secretary of State for War is responsible for the introduction of the Mutiny Act, is he not?—Quite so.

4492. He usually consults the Judge Advocate-General as to alterations in it?—Yes.

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4493. And of course the Judge Advocate-General for the advice which he gives is responsible to the Secretary of State for War?—Of course.

4494. With respect to the Articles of War, are they not usually issued at the suggestion of the Commander-in-Chief?—Yes.

4495. And the Commander-in-Chief usually consults the Judge Advocate-General with respect to any alterations in them?—Yes.

4496. And the Judge Advocate-General is responsible to the Commander-in-Chief for the advice which he gives him?—Certainly.

4497. But neither with respect to the Articles of War nor with respect to the Mutiny Act is there any initiatory action on the part of the Judge Advocate-General's office?—Yes, with regard to the Articles of War there is. I have several amendments which originated entirely in the Judge Advocate-General's office.

4498. Is it not the case that they were suggestions which were made to be carried out by the Secretary of State for War?—Before they were submitted to the Secretary of State for War they were made by the Judge Advocate-General. The following letters passed between the War Office and the Judge Advocate-General's office on the subject of alterations and amendments in the Mutiny Act:—

"Sir, War Office, February 18, 1868.

"I am desired by the Secretary of State for "War to transmit the enclosed file of official papers "and to request that you will cause the necessary steps "to be taken so to amend the 91st section of the "Mutiny Act as again to make its provisions ap- "plicable to the colonies and Her Majesty's foreign "dominions, as it existed previously to 1863, when "its operation was extended to India. I am further "to request that you will inform Sir John Pakington "how soon he may expect to receive the interleaved "copy of the Mutiny Act and Articles of War, show- "ing the proposed amendments and alterations. It "is requested that the enclosures which are in "original may be returned.

"I have, &c.

"(Signed) Edward Lugard."

That letter is addressed to the Judge Advocate-General. The reply from the Judge Advocate-General's office is as follows:—

"Judge Advocate-General's Office,

"Sir, February 19, 1868.

"(1.) In reply to your letter of the 18th "instant, I have the honour to transmit to you for the "consideration of Sir John Pakington an interleaved "copy of the Mutiny Act and Articles of War, show- "ing the proposed amendments for the present year. "(2.) The majority of those amendments consist "of those framed by me in pursuance of instructions "from the Secretary of State for War; but the "amendment in the 8th section of the Mutiny Act, "and those in the 36th, 41st, 106th, 157th, and 160th "Articles of War have been proposed by me, and "have been approved by the Field Marshal Command- "ing-in-Chief. The alteration in section 19 of the "Mutiny Act has been approved by the Secretary of "State for India.

"I have the honour to be, sir,

"Your obedient servant,

"J. R. Mowbray."

That letter is addressed to the Under Secretary of State for War. The Judge Advocate-General, in communication with the Commander-in-Chief, alters articles and then sends them up, when the whole work is finished, for the final approval of the Secretary of State. I own that the Secretary of State for War is responsible for them, but I believe that the Articles of War are prepared in the Judge Advocate-General's office. We only initiate alterations in matters of finance. The letter from the Judge Advocate-General's office to the War Office, which I have read, shows that certain suggestions were made by the War Office, either directly or from the Commander-in-Chief, and that the Judge Advocate-General sent to the War Office an interleaved copy of the Articles of War, with certain articles altered by him which we did not know of before. That, I think, clearly shows that the work was corrected and prepared in the Judge Advocate-General's office. There can be no doubt of that; and therefore the Judge Advocate-General is responsible for the work which he performs. Of course it is the duty of the Judge Advocate-General to make the necessary alterations in the Articles of War, and he makes them upon application from the War Office.

4499. (*Marquis of Hartington.*) In your opinion is the present system satisfactory as regards the trial of commissioned officers?—I do not think it is.

4500. Have you known cases in which the proceedings have been so unsatisfactory or irregular as to render it necessary to quash the whole of them?—Certainly.

4501. What do you consider to be the reason for that?—There are many reasons; the reason sometimes arises from there being a very incompetent president. At other times it arises from there being a very incompetent Deputy Judge Advocate. Courts-martial require a person with some knowledge of the procedure of courts-martial and of military law to guide them.

4502. Are there any suggestions which you could make which you think would render such courts-martial more satisfactory?—I think that if the rules laid down or agreed to by the Secretary of State for War and by the Judge Advocate-General regarding the Deputy Judge Advocates were strictly carried out, it would remove the irregularities in a great measure.

4503. It has been suggested that permanent courts-martial should be established; do you think that that would be a desirable arrangement?—It would be impossible.

4504. For what reason?—Because the regiments are so constantly changing their quarters, and officers have other duties to perform. You could not have one set of officers employed entirely upon court-martial duty.

4505. It has been suggested also that there should be a roster of presidents, and I understand the suggestion to be that no officer should be appointed president of a court-martial who did not show in some way that he was qualified for that appointment; would that in your opinion be practicable?—It is always at the discretion of the general officer to appoint a president, and I think that if he exercises that discretion properly there will be no difficulty at all. I think that it would be a very bad plan to have a permanent president.

4056. (*Chairman.*) There is no roster with regard to the presidents in the case either of regimental courts-martial or district courts-martial, is there?—There is in the case of regimental courts-martial and district courts-martial; but the general officer has a discretion as to the appointment of a president.

4506. (*Marquis of Hartington.*) You specified just now as one of the reasons for the unsatisfactory character of some courts-martial on officers, the incompetency of the presidents, did you not?—Yes.

4508. Then it appears that the present system of selecting presidents does not in all cases work well?—It certainly does not; but I do not think the other course would be a remedy for the evil. I think that the reasons against having a permanent president are stronger than the reasons in favour of such an arrangement arising from the great irregularities which occur.

4509. Do you see any objection to a shorthand writer being present, and to the examination being conducted *vivâ voce*, instead of by means of written questions?—There can be no objection to the answers being given *vivâ voce*, and taken down by a shorthand writer; but I think that sometimes it might be objectionable. In cross-examination you often have leading questions put, and also questions which are not proper to be put, and very often they are stopped

before they are put by the president or the Judge Advocate.

4510. But would not a well-qualified Deputy Judge Advocate be able to stop any irregular cross-examination?—Not always; for instance, where the prisoner is cross-questioning.

4511. Could not the Judge Advocate pull him up at once?—But he could not stop him until the question had been put.

4512. Do you see any objection to the system of *vivâ voce* examination being tried?—Not any to a trial of it.

4513. There would be least objection to it, would there not, in the case of the trial of an officer than in the trial of privates, because the officer would be an educated man and might be assisted by a legal friend, which would be an advantage which a private would probably not have?—Quite so.

4514. Is not the great length of the proceedings in the case of the trial of a commissioned officer one of the weakest points of the present system?—It is certainly, but I do not think that that is caused entirely by the writing the questions down, though no doubt certain delay arises from that.

4515. Is it not in your opinion almost impossible in the case of a witness who wishes to fence, and to avoid stating the whole truth, under the present system to extract the whole truth from him?—It is very difficult indeed.

4516. Do you not think that it would be easier under a system of *vivâ voce* examination?—Certainly.

4517. Do you think that the system of courts-martial is so unsatisfactory as to diminish to any considerable extent the confidence of officers in court-martial justice?—Certainly not. I think that the soldiers and officers look upon a court-martial as being as good a court as they possibly could have, constituted as it now is.

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4518. (*Lt.-Gen. Scarlett.*) At present many questions are asked by the members of the court. Do you think that if the members of the court were restricted to writing their questions and handing them through the president, the prosecutor and the defendant being allowed to question *vivâ voce*, it would be any improvement?—That would make very little difference, I think.

4519. (*Marquis of Hartington.*) Do you see any objection to either the prosecutor or the prisoner being represented by a legal friend, and to the examination being conducted by such friend?—Very great objection indeed. Both the prisoner and the prosecutor have now the liberty of having a friend, but that friend is only to advise; he is not allowed to speak, and I think it is a very good principle.

4520. What objection do you consider would exist to the contrary practice?—I think it would be making it too much a civil court. You would have then two lawyers, one on either side, and it would entirely take away the military character of the court. From my own experience, I think that there would be an objection to such a practice.

The witness withdrew.

Adjourned to Monday, 8th June, at 12 o'clock.

Monday, 8th June 1868.

PRESENT:

COLONEL THE RIGHT HON. JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER, C.B.
CAPTAIN THE HON. J. C. W. VIVIAN.
SAMUEL WHITBREAD, ESQ.

JOHN LLOYD WHARTON, ESQ., *Secretary.*

LIEUT.-COLONEL WILLIAM GREGORY DAWKINS called in and examined.

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4521. (*Chairman.*) By a letter which I received from you, I was given to understand that you wished to make some suggestions to this Commission with regard to Courts of Inquiry. Will you have the goodness to explain to the Commission what those suggestions are?—The suggestions which I wish to make chiefly consist of a comparison between the theory of Courts of Inquiry, as laid down by recognized writers, and the practice as I found it from my experience in the army; for which purpose I have made some notes, as it is very difficult to carry all the references to authorities in one's recollection, and, with the permission of the Commission, I will refer to those notes.

4522. (*Lt.-Gen. Peel.*) What are the recognized writers upon Courts of Inquiry to whom you refer?—I consider that Simmons and D'Aguilar and the Articles of War are the chief books used by the service and recognized as authorities.

4523. Is it what they say with regard to Courts of Inquiry to which you wish to call the attention of the Commission?—Yes, and also to what is the general belief in the army. I have to thank the Royal Commission on Courts-martial for permission to offer evidence which I consider material and confined to the general bearing of Courts of Inquiry. I desire to give evidence as to the practical nature and powers of Courts of Inquiry. It is in effect represented to the army by recognized authors that Courts of Inquiry are essentially preliminary from their constitution, that they ought to have no power for final results, and that they are only efficacious so far as to inquire and report whether a charge should be entertained, and whether further proceedings should be instituted; that, in fact, a Court of Inquiry virtually stands in the position of a grand jury, or other court of the first instance; but my experience in the army proves that in practice Courts of Inquiry are entirely different from what is above described, and are both in working and in effect entirely different from what is generally believed, and from the representations made to the army by authors of recognized books used by the service. For instance, Simmons states (page 85) that the main object of Courts of Inquiry is to enable an officer to arrive at a correct conclusion as to the necessity of convening a court-martial; and he also (page 81) describes them as courts "not to be considered in any light a judicial body," and that "information" received at a court of inquiry "may be "*ex parte*, and must from its nature be inconclusive." Whereas, in fact, such grave matters as the following have been submitted for final decision to so-called courts of inquiry. But I must observe that, in illustrating, by facts from my experience, the instructions given to courts of inquiry, and the mode in which they deal with them, I desire to be understood to be seeking no opinion from the Royal Commission as to

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the injustice to which those facts may bear testimony; yet I consider that facts are necessary to establish evidence. Some of the grave matters intrusted to the final decision of courts of inquiry have been the following:—For instance, whether an officer of 20 years' service is unfit for his position; whether his command is prejudicial to the service, and whether other officers have made untrue statements or representations (which, being untrue, are consequently falsification of fact), and this having been converted into a virtual charge (of bringing false charges) against the officer who denied the false charges against himself, is a charge of immense gravity which, if sustained, should manifestly have been followed by a court-martial, and if not sustained should have incurred no penalty of dismissal on "inconclusive" evidence. Other grave matters which have been intrusted to the investigation of courts of inquiry have been whether an officer in command has unduly performed his duty in remarking upon and endeavouring to check unfair scoring at rifle practice; whether an officer of 20 years' service is fairly treated by being ordered to parade, and there ordered to take command of a wing, and then publicly superseded and virtually dismissed from the field for obeying that order of his commanding officer, for which obedience he is accused of "surreptitious" conduct by the officer who publicly superseded him.

4524. (*Lt.-Gen. Eyre.*) You are giving what appear to be the instructions to a court of inquiry; are those the exact words of the instructions, or are they your version of the instructions?—They are not an exact quotation, but they are, as near as I can remember, the words.

4525. (*Lt.-Gen. Scarlett.*) You used the expression "intrusted to the final decision of courts of inquiry," did you not?—I did. I should add that the instances which I have given are possibly not exactly *verbatim*, though I think some of them are; but to the best of my recollection they are correct.

4526. May I ask upon what grounds you state that those matters were intrusted to the final decision of courts of inquiry?—Because final decision has been taken upon the opinions of those courts.

4527. But were those final decisions intrusted to the court?—No; I do not say that they were; I say that those matters were intrusted to the court.

4528. (*Lt.-Gen. Peel.*) Was the court called upon to give any opinion upon the questions submitted to them?—Yes, they were called upon to give an opinion. The word "opinion" was used in the instructions, I am certain.

4529. Have you copies of those instructions?—I was not allowed to have any official copies of the instructions, otherwise I could give them *verbatim;* but the nearest I have are those which were published in the "Times," to which I can refer.

4530. But courts of inquiry are confidential and private courts, are they not, the examinations being conducted in private before them?—They are.

4531. How did the "Times" become acquainted with their proceedings?—Because at the proceedings in an action at civil law, to the best of my recollection, those instructions were stated, but the "Times" report will show whether they were stated or not. I am certain that what I have stated is the gist of the matter intrusted to the final decision of the court of inquiry, though it may not have been exactly in those words. I wish to remark that these are grave questions and heavy charges which, in practice, are given by authority for final decision to courts, which the army is, by writers of recognized books, made to believe are not judicial bodies, and can only receive inconclusive evidence, and yet on such evidence military authority has, in practice, conclusively acted. Since the gravest matters have been intrusted for final decision to courts of inquiry, these courts are manifestly used indiscriminately with courts-martial. The comprehensive vagueness of such an instruction as the second above-mentioned admits of equally vague and comprehensive conclusions; especially so, when, as in practice, I have found by experience that courts of inquiry are permitted to evade many of their instructions, and to give no opinion upon points which they have been instructed to test or to investigate. In such cases an officer would appear to have a right to a court-martial, both on the understanding upon which officers undertake military service, as well as on the manifest conditions of cases clothed in such vague terms as beneficial or prejudicial to the service. Yet in such cases courts-martial have been refused. With regard to courts-martial, it is laid down in the Articles of War, "Whenever any officer" "shall commit a "crime deserving punishment, he shall," "be put in "arrest," "until he shall be either tried by a court-"martial, or shall be lawfully discharged by a proper "authority;" but from my experience I testify that an officer can be put in arrest for no crime deserving punishment, and further that all decision by authority on the justice of the arrest can be, since it has been persistently refused. Hence I submit that a clause should be added to the above law, which, for the protection of officers against malicious abuse of military power, and for the maintenance of their proper position, to the benefit of the service, shall entitle an officer to a court-martial, if a charge of any "crime deserving punishment" can be made against him, or (failing which charge) shall bring the officer to a court-martial who has placed another in arrest for no "crime deserving punishment," or for no military offence whatever; and that thus an officer may be justly relieved from unmerited stigma of arrest, whether inflicted by mistaken judgment, or at the suggestion of private malice, for no military offence whatever. With further reference to courts-martial, it is laid down in the Articles of War that "no officer," "who shall be put in arrest" "shall "continue in such arrest" "more than eight days, "or until such time as a court-martial can be con-"veniently assembled." And it is further laid down in the Articles of War "who shall unnecessarily de-"tain any prisoner in confinement without bringing "him to trial," "shall if an officer" "be liable to be "cashiered or suffer such other punishment, accord-"ing to the nature and degree of the offence as "by the judgment of a general court-martial may be "awarded;" but I testify from my experience in the army, that an officer has notwithstanding this law been kept in almost close arrest for 11 days without a court-martial having ever been assembled; and, further, that in violation of the above law, an officer has been "unnecessarily detained" in confinement, without bringing him to trial, without the officer who detained him being made "liable to be cashiered or "suffer" any "other punishment" "as by the judg-"ment of a general court-martial may be awarded;" and I further testify that the officer was "unneces-"sarily detained" by authority of the Commander-in-Chief, or by that of his immediate staff at the Horse Guards. Hence, I submit that in justice to the service, and in fair fulfilment of the bargain made by the State with officers who engage in its service, laws should be passed entitling officers to redress against wrongs suffered by violation of the laws passed by Parliament, entitled "The Rules and Articles for the "better Government of Our Army," and that redress should be granted even when violation of the law is committed by the Commander-in-Chief of the army for the time being. Simmons further states (page 85) that "while it is not to be imagined that any motive "but the honour of the army and benefit of the ser-"vice can influence the Crown to establish a court of "inquiry," &c. "it is too true that other motives "may actuate commanding officers," &c.; also (page 86) "before a court of inquiry the character of an "officer is not protected by the solemnity of an oath;" also (page 86) Simmons holds out to officers that "Justice forbids investigation by courts of inquiry, "which may countenance malicious accusations, of "which it can not pave the way for trial, particularly "as the members who compose the court, if such it "can be termed, are not subject to challenge, and are

" irresponsible to any superior tribunal for the opinion " they may give." Yet, notwithstanding such rules, final decision has been accepted from courts of inquiry as to the following charges, brought by an officer in command, namely, "incompetence in the field;" "unfit- " ness to conduct the business of a battalion in bar- " racks;" of having "shown such want of judgment, " tact, and temper" as "not fit to be intrusted with " the responsibility and charge of a command;" also, the charge, "I do not accuse (the officer in question) " of inability but unfitness," and the charge of "sur- " ruptitiously assuming a command." These charges have been made by a senior officer who was in the desperate circumstances of having staked his own position and emoluments of command against the position held by the accused field officer, and who "influenced" authority " to establish a court of inquiry" on the officer he accused, by a written "request" to the Adjutant-General "that his conduct (that of the " officer he accused) may be referred for investigation " by a court of inquiry," and further stating to the Adjutant-General that he had "taken the present course " advisedly in order to bring this case to a decision." I submit that the existent power and practice of courts of inquiry, including the power and the practice of receiving or rejecting evidence of any description, to which I will shortly refer, render courts of inquiry unfit and incompetent to arrive at final conclusions on such charges as the above, which under the above circumstances "may" (as suggested by Simmons), "it is too " true," be "actuated" by "other motives" than "the " honour of the army and benefit of the service." I submit another instance of a charge of an uncircumstantial nature, and so utterly unproved as to be clearly open to the view that it was actuated by other motives than the honour of the army. An officer in command (having employed military power of arrest, in retaliation for an alleged affront admittedly self-incurred, and manifestly of only a private and not of a military nature) gave evidence and charged the accused officer with "being unable to command himself, and there- " fore unfit to command others," and gave no other attempted proof of any truth in his charge beyond an incorrect relation of the alleged affront and preceding circumstances, which had actually occurred more than four years previously, and contained no proof of his charge. I could add further instances, but I submit that the two instances above given form grounds for a necessity of enactment of distinct rules and of a clear restriction of the functions of courts of inquiry, and for violation of which redress may be attainable. The power and practice of receiving or rejecting evidence of any description, to which I have above referred, are fair grounds of complaint by officers of the army, while courts of inquiry are used indiscriminately with courts-martial. I allude to my experience, which I can prove by instances, that courts of inquiry have the power and employ the practice of arriving at final and fatal conclusions on such evidence as hearsay; opinion unsupported by adequate facts; statements, untrue and unsupported by facts; opinion unsupported by any proof of fact; testimony rejected or question not allowed; refusal of witnesses to produce any facts; evidence changed or retracted on discovery of its tendency; evidence which, if proved, would show no absence of due and beneficial discharge of duty; evidence on facts beyond retrospection of court-martial. Officers have made important statements of fact, which have been shown to be false, and yet the remainder of their unsubstantiated evidence has been accepted at a court of inquiry, without the solemnity of oath. I consider that an officer whose conduct is made the subject of a court of inquiry, which may deprive him of his commission by their opinion, is an accused person. "D'Aguilar on Courts- " Martial" (revised by Endle) states (page 98), that the accused party should have notice of the object of the inquiry; in practice, however, that object is kept secret from him. A court of inquiry promised to an officer to investigate the truth or untruth of matters of fact, has been in practice not only permitted to evade that decision on the said matters, which the officer concerned was made to believe was the only object of the assembly of the court, but the court has been secretly instructed to give opinion upon a widely different and vague, though vital, point, namely, to the effect of whether the conduct or performance of duty of the officer in question is prejudicial to the service; this secret point only being made known to the accused during the proceedings, of which I could give one, if not two, instances. Such accused officer having thus been deceived as to the points before the court for their decision, and being thus deprived of the proper exercise of his right to decline making any statement before a court of inquiry, and to decline to take any part in the proceedings (Simmons, pp. 82, 83). But even in the case of no promise or no description of the object of the inquiry having been given to the officer implicated or accused, I consider that a "Form " of a court of inquiry" (D'Aguilar, p. 128), which indicates that "specific instructions" may be communicated to the president, and read and duly considered by the court, might be amended by the addition that those instructions should be previously made known to the accused person, on the acknowledged principle of justice allowing him to know the charge against him. Simmons (p. 85) states as follows:— "The main object of a court of inquiry ordered by " authority less than supreme, is to enable an officer " in command to arrive at a correct conclusion as to " the necessity of convening a court-martial. Such " pretext cannot possibly, under any circumstances, " exist where the facts to be inquired into are of a " date beyond the retrospection of a court-martial. " This the Mutiny Act limits to three years, except " in case of impediment to trial."

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4532. (*Chairman.*) In that last sentence have you given the whole of what Simmons says about the objects of courts of inquiry?—I have not, it is very long, it takes up many pages.*

4533. I think that, if my recollection serves me, his statement includes other objects than those which you have mentioned?—I cannot state exactly what it includes; there are many other things besides what I have stated.

4534. But that particular portion of the observations of Simmons I believe alludes to other objects of a court of inquiry than that of its being preliminary to a court-martial?—This part which I am reading is not the part which alludes to courts of inquiry being preliminary to courts-martial. What I have read part of has reference to another view of the subject. The main object of a court of inquiry, as described by Simmons, I have read. But in the practice of courts of inquiry, when an officer has risked his own position and emoluments by staking them against the position held by a field officer whom he accused, the senior officer, the accuser, is allowed to bring as a witness an officer who had actually given up his command three years previously; and the hostile opinion of this *quondam* commander, is adduced and received as to the fitness of the accused officer for a position which, though he had held for three years, he had yet never held till after the *quondam* commander had resigned his command; under whom therefore the accused had never served in that position of field officer, as to his fitness for which position the said *quondam* commander is allowed to give evidence of direct hostile opinion, which he only attempts to support by reference to circumstances which actually occurred four years before, and hence "of a date " beyond the retrospection of a court-martial." I submit that if courts of inquiry (on whose data an officer is deprived of his commission) are to be exempt as above shown from the restrictions imposed on courts-martial, and if courts of inquiry can receive as evidence of unfitness, circumstances which three years before had not impeded appointment, then the

* Meaning the subject of courts of inquiry.

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service can fairly complain of evasion of its terms and spirit, unless such latitude of courts of inquiry is avowed and made known to the officers of the army. There is further just reason for complaint of the laxity or absence of rule for guidance and restriction of courts of inquiry. Simmons states (p. 84), that it is unsettled whether the proceedings are (in form) signed by each member. Nor practically does their signature indicate their agreement with the professed conclusions of the court. I testify that a member has declared that he had signed under pressure and under protest. This circumstance must be fatal to the importance of any conclusion by means of courts of inquiry; neither members nor witness are sworn, nor in practice does it appear that any declaration is made by either. D'Aguilar (p. 97) states, "The proceedings assimilate as nearly as possible to "courts-martial, both as regards the examination "and cross-examination of witnesses;" and (p. 98) that the "accused party" should "be permitted to "put any questions he may think proper, provided "they are such as would be admitted by a court-"martial." While in practice an accused officer has been restricted as to cross-examination on most material points, and witnesses have been allowed to refuse to give any facts in support of conclusions they profess to entertain. At courts of inquiry evidence is not necessarily written down as given; selections from various statements are sometimes made; the writer of the proceedings is not necessarily an independent nor unprejudiced person, and yet such courts are used to deprive officers of their commissions.

4535. (*Chairman.*) Is that merely an expression of your opinion, or is it a known fact that those courts do deprive officers of their commissions?—It is the expression of my experience that those courts are used in the practice of the army to deprive officers of their commissions.

4536. But is it not the case that no opinion of a court of inquiry can deprive an officer of his commission?—The opinion of the court being that an officer's performance of his duty is prejudicial to the service, and the officer on the ground of that opinion being dismissed from full pay commission, I think justifies the expression that those courts are used to deprive officers of their commissions.

4537. (*Lt.-Gen. Peel.*) By whom are they dismissed?—By the authority which has the power of dismissing officers.

4538. And on the responsibility of that officer whoever he may be?—Yes, of that officer, or of the Queen, or whoever it may be.

4539. But courts of inquiry do not sentence officers to be removed from the service, do they?—No, I do not say so; I say that the courts are used, and that the information acquired before such courts is used to deprive officers of their commissions.

4540. You have made use once or twice of the expression "the final decision of the court," is it not the case that the court come to no decision whatever?—I beg your pardon, they do.

4541. They express an opinion?—But that is treated as a final decision if no further investigation follows.

4542. (*Lt.-Gen. Scarlett.*) The court have no decision, have they?—They make a decision on the points laid before them.

4543. Do you mean to assert that a court of inquiry comes to a final decision?—I mean to assert that decisions arrived at by courts of inquiry have been final as to the points on which they had to decide, and that those decisions or opinions, whichever they may be called, (I think it makes but little difference,) have been used to deprive officers of their commissions.

4544. But do you consider that there is no difference between the word "opinion" and the word "decision"?—An opinion whether a given matter is true or untrue, if it is not tested by any subsequent investigation, becomes a final decision if action is taken on that opinion.

4545. Is it not a fact that it is not a decision of the court, but a decision of those by whom the court is convened?—I think that my meaning must be understood, though perhaps it may not be expressed strictly logically or legally.

4546. (*Chairman.*) Will you proceed with your statement?—D'Aguilar (p. 97) indicates that the superior authority should be satisfied that the court have carried their investigation to the fullest extent in their power. Yet in practice superior authority receives as satisfactory, proceedings of courts of inquiry containing continuous evasions of fact, and manifest evasion of avowed and important points given to them in their instructions, for investigation.

4547. That, again, is your opinion?—That is my statement of fact.

4548. But it is merely an expression of your opinion, is it not?—It is an expression of my opinion which I can adduce facts to prove.

4549. You are giving us simply the expression of your opinion, are you not?—I consider that I am giving you a statement of facts which I can prove by instances. While the Articles of War and the Queen's Regulations indicate necessity of fair trial, and while the most guarded care and watchfulness is practised with regard to the private soldiers and non-commissioned officers, no protection is afforded to the officer, who may be ruined without any trial amounting to an investigation of facts, and on the mere *ex parte* charge or even opinions of those who may be most interested in his removal. In illustration of this remarkable anomaly I state that I have suffered from such a case, and that the Commander-in-Chief has informed me to the effect that I am on half-pay for making appeals and denying unsubstantiated representations. In the professions of the church, the law, and of medicine all are entitled to judicial investigation, without which the door is open to fraud in the removal of a public servant to the benefit of others. It is contrary to the policy of this country and to the wishes of the people that the career of a public servant, however humble, should be ruined on secret reports which he can never see, on unsubstantiated opinions which he may never test by facts, and which may be given by his bitterest enemy.

4550. The Commission wish me to state to you that, up to the present time, they have listened to your statement which involves a number of facts which would require to be proved in evidence before they could be admitted to be facts, and that they are not prepared to undertake, inasmuch as they are not a court of appeal from any other quarter. They, therefore, wish you to confine your evidence to the general opinion which you entertain without quoting those facts which cannot conveniently be substantiated here. I am sure that the Commission will do you ample justice in putting forward any opinions which you may wish to express, but they must keep themselves clear from admitting as facts things which are not proved, and which it would be very inconvenient for them to have proved, without being considered a court of appeal. Is there any alteration which you would like to suggest in the present constitution or practice of courts of inquiry or courts-martial?—I would submit that if a Commander-in-Chief considers an officer unfit to continue to hold a position which he has held for years, there should exist some tribunal open to such officers as are conscious that their conduct will stand the test of comparison with that conduct required by the rules of the service. I submit that the officers of the army may fairly complain that they are deceived by the profession of the theory and purpose of a court of inquiry being so opposed to its actual end and practice, officers being led to believe by Simmons, p. 82, that "the information received at a court of "inquiry must from its nature be inconclusive," while in practice such "information" is actually applied to the purpose of ending their military career with the loss of their commission. I submit that the existing custom of conducting courts of inquiry should

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be subjected to rules clearly defining not only the nature and the measure, but also the treatment of subjects which may be intrusted to their investigation, and that such rules should in fairness be made known to the army. I submit that if courts of inquiry are to be continued in use indiscriminately with courts-martial, it is due to justice that that their researches should be conducted to the depth of fact, and on the same sound rules of evidence as are in in practice the rules of courts-martial. I submit that opinions should not be held as valid unless supported by facts, and that those facts should be of a nature which according to the regulations of the service will qualify them to establish such opinions. I submit that statements involving the ruin of an officer should be received only on oath. But if courts of inquiry should not be continued in use indiscriminately with courts-martial, and if courts-martial are found under existing regulations not to be qualified to investigate anything but charges of actual misconduct, then their powers might be extended to embrace charges which, though minor, yet entail the maximum result of dismissal. I submit that a court of inquiry should be at the call of the superior officer, but that the junior officer should be entitled to a court-martial before being visited with penalty on the report of a court of inquiry. I further beg leave to call the attention of the Royal Commission to the proceedings of an action which, though it occurred in India, yet was founded entirely on an inquiry of a nature which, though not officially a court of inquiry, was carried on very much in the way which I have already instanced, and through which an officer was induced to resign his appointment on pressure, consequent on charges with the foundation for which he did not even become acquainted until after he had resigned, and which charges were afterwards found to be founded upon statements so false that a civil court gave him damages for the injury which he sustained. Those proceedings, if I may be allowed to do so, I will leave for the inspection of the Commission. They belong to Sir Mordaunt Wells, who was the judge of the case, and they will be found very interesting, I think, with regard to courts of inquiry.

4551. Have you any further suggestions to make to the Commission?—I have not.

The witness withdrew.

Col. E. Haythorne.

COLONEL EDMUND HAYTHORNE called in and examined.

4552. (*Chairman.*) Will you state the offices which you have held and which you now hold in the army?—I am on half-pay now; I was five and a half years Adjutant-General in India.

4553. When did you cease to hold that position?—In November 1865.

4554. What other appointments had you held previously to that?—Before that I was chief of the staff to the China Expedition for a short time only, and before that I commanded regiments.

4555. How long were you in command of a regiment?—I commanded the 98th for about two years as lieutenant-colonel, and both battalions of the Royals, altogether about six years.

4556. With regard to courts-martial in India, would you suggest any alteration in the present system?—Under the present system there is a Judge Advocate-General, who, as an officer of the army, belongs to the head-quarter staff.

4557. What rank does he hold?—He ranks with a full colonel in the army. There is a Deputy Judge Advocate-General who is generally also at head quarters.

4558. (*Marquis of Hartington.*) Is he also a military officer?—He is also a military officer.

4559. (*Chairman.*) What rank does he hold?—I think he ranks with a field officer, a major I think, and there are Deputy Judge Advocate-Generals of division, all being military officers belonging to the staff of the division.

4560. How many Deputy Judge Advocate-Generals of division are there?—There is one to each division of the army in Bengal.

4561. How many divisions are there?—I think there are six divisions, but I do not remember exactly.

4562. Does each division embrace a large district?—Each division embraces a large district.

4563. Are the duties of a Deputy Judge Advocate-General in India exactly the same as those laid down in the last Mutiny Act in England?—I have not served in England for many years and I have not had an opportunity of judging; but I can recapitulate what their duties are.

4564. Will you state what are the duties of the Deputy Judge Advocate in India?—He is the adviser of the general of division in all questions of military law; all district courts-martial are sent to him by the president, he puts his remarks upon them and submits them to the general.

4565. Does he attend the court-martial?—He only attends district courts-martial in complicated cases, and not necessarily. He attends all general courts-martial in the division.

4566. When he attends a court-martial in person what are his duties?—His duties are to conduct the proceedings as an impartial officer.

4567. Not as a prosecutor in any way, or as taking part in the defence?—Not as a prosecutor, nor as taking part in the defence.

4568. Has he anything to do with drawing up the charges?—Certainly. The whole statement of the evidence goes to him in the first instance when a charge is sent in.

4569. Does he draw up the charges?—I think that he must do so, but I am not quite certain as to that. At all events he is aware of what the charge is before it is submitted to a court-martial.

4570. Is he allowed to sum up, or to address the court in any way?—I cannot speak as to that actually, but I do not think so; things were in a state of transition when I left as Adjutant-General.

4571. Does the number of officers on a general court-martial in India differ from the number in, England?—No, it is 13, but it may be less if that number cannot be got together.

4572. Do you think it advisable that the number, 13, should be maintained?—I think that a less number would do. It is now reduced to nine.

4573. (*Marquis of Hartington.*) Does the Judge Advocate-General in any case attend courts-martial?—I have never known a case.

4574. Is he merely the adviser of the Commander-in-Chief?—He is merely the adviser of the Commander-in-Chief, and he has also the power of referring to the civil advisers of the Government on difficult points of law.

4575. Has he any legal assistants in his own office?—He has no acknowledged legal assistance, but he can always refer difficult legal points to the legal adviser of the Government of India, which he very often does.

4576. (*Chairman.*) Do you see any reason why courts-martial in India should be conducted on any other plan than that on which they are conducted in England?—None whatever.

4577. Are there all the facilities there that there are in this country?—I think there are more Deputy Judge Advocates-General of division in India than there are Deputy Judge Advocates in England.

4578. You have had a great deal of experience of courts-martial, have you not?—I have.

4579. Would you advise that the present system of taking evidence in courts-martial by putting the questions in writing should be altered?—No.

4580. It has been suggested that the finding should be given in writing; would you see any objection to that?—There is no objection to that. I do not recol-

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lect any case where the junior members of a court failed in the finding.

4581. What, in your opinion, is the reason of the present system of commencing with the junior?—It is hard to say. I really do not know how it originated; I suppose it must have been with a view to prevent their following the lead of their seniors that it was adopted first. I think, as regards the finding of a court-martial, that the junior officer is quite as competent to give an opinion as the senior. As regards the sentence, I think it is a thing which requires experience.

4582. Do you think that, as regards the sentence after the finding, it ought to be discussed?—I think that the sentence ought to be discussed in the court.

4583. In a general court-martial it is discussed, is it not?—I think so generally. It has been so where I have been employed on courts-martial.

4584. But after discussion would you recommend that the sentence should be decided upon in a different way from that in which it is now decided upon?—I think it works very well at present after discussion. Certainly sometimes young officers perhaps give too much or too little, and it may happen that others may not give what they would actually give, in order that the sum of the whole may be in accordance with the nature of the crime.

4585. Should you see any objection to greater latitude being given to the prisoner in his defence than he has at present, and that he should have the power of choosing an advocate who should address the court?—I do not think any addressing the court by an advocate should be allowed on either side.

4586. You would maintain perfect equality in that respect?—Perfect equality.

4587. In your experience does the prosecutor often address the court for the prosecution?—I think he generally makes a statement of the facts of the case which he is prepared to prove. I do not think that any president who knew his duty would allow him to go beyond that.

4588. But, by the Queen's Regulations, I believe that he has a right, has he not, to address the court on the summing up of the evidence?—Yes.

4589. (*Lieut.-Gen. Scarlett.*) Do you allude to general courts-martial, or to district courts-martial? To general courts-martial.

4590. Upon a district court-martial is it usual for the prosecutor to address the court at all?—I do not think it is a usual thing, but they do it sometimes; though I should say it was rather a rare occurrence.

4591. (*Chairman.*) In India, from your experience, are there many revisions of courts-martial?—Not many, I think. They are very careful as a rule in the proceedings of courts-martial.

4592. With reference to the revision of a sentence of a court-martial as regards the aggravation of the punishment, do you think it is essential to the discipline of the army that the power should be retained in the revising officer of remitting the decision of the court with a view to increasing the punishment?—I think that that power should certainly remain of revising a sentence, with a view to increasing the punishment in extreme cases where a court-martial has really lost sight of the nature of the crime, and perhaps treated a serious crime a great deal too leniently.

4593. But that defect must arise in a great measure, must it not, from the defect in the composition of the court?—I think that almost all the errors arise from the Articles of War and the Mutiny Act being so complicated. If there was a plain code of rules over which nobody could make mistakes, those things would not occur.

4594. Then your opinion is that it is difficult for any court to form an opinion upon the Mutiny Act, the Articles of War, and the Queen's Regulations combined?—Exactly.

4595. (*Marquis of Hartington.*) Do you think that it is necessary also to retain the power of re-assembling a court-martial for the purpose of reconsidering the finding?—I think so. I think that courts-martial are so independent that it most frequently happens that they adhere to their original sentence, and, therefore, so long as they keep their independence, I do not see why any error of judgment should not be pointed out to them, so as to give them a chance of rectifying it if they think fit.

4596. But where the finding of a court-martial is one of acquittal, if that is sent back by a superior officer for reconsideration, does it not look like a direction to find the prisoner guilty?—It may appear so in the eyes of the public, but I do not think it is so literally.

4597. (*Lt.-Gen. Eyre.*) Would you allow any revision of the finding to take place except on some legal point, that is to say, the court having gone wrong according to the Mutiny Act?—I should reserve the power of re-assembling the court-martial.

4598. (*Marquis of Hartington.*) Do you not think that it is calculated to weaken the confidence which the army in general would have in the justice administered by court-martial?—I do not think so, because the reasons are always stated, and when a court-martial is promulgated, the reasons are promulgated also.

4599. (*Chairman.*) The reasons are always read at the head of the regiment, I believe?—They are.

4600. (*Marquis of Hartington.*) Have you known many cases in which it has occurred that the court has been re-assembled to reconsider its finding?—Very rarely. I could not recollect one at the present moment.

4601. (*Chairman.*) Have you ever known a case in which it was essential to the discipline of the army that a finding of acquittal should be reconsidered?—A case occurred in India the other day in which a court was re-assembled, and they adhered to their former finding, but it is difficult to recollect cases.

4602. In your experience has the finding of a court ever been revised with a view to finding a prisoner guilty when he had been acquitted, such revision being essential to maintaining the discipline of the army?—I really cannot recollect any case.

4603. Do you believe that the officers of the army generally are sufficiently instructed in military law and the usages of the army, or would you recommend any further examination of them with a view to their acquiring greater knowledge?—I am of opinion that the thing ought to be so simple that any man could master it with ease: but I think a very good system of examination goes on in every regiment; they are all examined in the Mutiny Act, the Articles of War, and the Queen's Regulations; I think it is more in the laws of evidence that officers are perhaps wanting in knowledge.

4604. How would you suggest that the officers of the army should be better instructed in the laws of evidence?—Through the Deputy Judge Advocates-General of division, who, I think, should be all passed officers upon military law. There might be a class established in the Staff College for that purpose.

4605. (*Lt.-Gen. Eyre.*) Forming part of the staff of the army?—Forming part of the staff of the army, as they are in India. Through the Deputy Judge Advocates, I think, examinations might be carried out constantly in regiments.

4606. (*Chairman.*) Would you recommend that there should be an examination by the Deputy Judge Advocate of the officers of each regiment?—I think it would be very advisable if there was some small handy work compiled which would enable officers at once to get at the root of it. At present they have to read over a great deal. Simmons' is a voluminous work, and then there is D'Aguilar and the Queen's Regulations and the Articles of War, so that it is impossible to know where to look for anything. What is wanted is a small code, like the Queen's Regulations, which everybody can get and make himself master of.

4607. Do you think it would be possible, without much difficulty, to draw up such a code from those

three sources?—I should think nothing would be easier.

4608. (*Lt.-Gen. Eyre.*) Is it not the case that in the Madras Regulations such a code was drawn up in 1857 for the benefit of the army, and that it has continued ever since?—I think so.

4609. (*Chairman.*) Do the same rules apply in India with regard to the examination of officers of regiments as in England?—Yes.

4610. Would you consider that a commanding officer of a regiment did not do his duty unless he, at stated periods had his officers examined upon those points?—Certainly.

4611. Would you make any further limitation than at present exists with regard to the standing of the officers who should sit on courts-martial?—No; I think that the present rules are very good. I think it is three years.

4612. With regard to regimental courts-martial, do you believe that it is essential to maintain regimental courts-martial as they now are?—Yes, I am an advocate for regimental courts-martial.

4613. It has been suggested to this Commission that it would be an improvement if further power were given to commanding officers of regiments, giving at the same time an appeal to the soldier in every decision of the commanding officer which was beyond the limits of his present jurisdiction, instead of regimental courts-martial; would that in your view be a desirable change?—It is giving a very great power to individuals. I should prefer the court-martial to remain, but I would strengthen the commanding officer's hands in some other matters.

4614. In what way would you strengthen his hands in other matters?—I would give him the power of fining soldiers for drunkenness.

4615. That is the power of a court-martial?—That is the power of a court-martial. I would give the commanding officer that power without a court-martial.

4616. Would you under such circumstances give the soldier an absolute right of appeal to a court-martial, if he thought fit?—For all matters connected with his pay, most certainly.

4617. But would you give any further power to the commanding officer of a regiment in case of drunkenness beyond what he now has?—I think that trial for habitual drunkenness should be done away with, because it keeps a great number of men in long imprisonment while their sober comrades are doing their duty.

4618. (*Mr. Whitbread.*) What would you substitute for that?—Fining. If you take the money from them they have not the means of getting drunk. Besides, trial for habitual drunkenness makes men keep absent from barracks a great deal. They prefer remaining absent.

4619. You propose to do away with trial for habitual drunkenness; how would you propose to deduct a man's pay unless you tried him?—By giving the commanding officer power to fine him as a magistrate does for every act of drunkenness.

4620. Did you not state that in everything relating to a man's pay he should have a right of trial?—I said that he should have the right of appeal.

4621. It has been suggested to this Commission that, instead of courts-martial, whenever the crime exceeds the jurisdiction of the commanding officer, it should go to the three senior officers of the regiment; would you approve of that?—No, I do not see any necessity for it.

4622. You would object to that?—Yes, it would be like commanding a regiment by a committee.

4623. Are there any other additional powers which you would recommend being given to a commanding officer beyond those which he now has?—No.

4624. (*Capt. Vivian.*) Would you give a commanding officer power to reduce a pay serjeant to a lower grade?—He can reduce a pay serjeant.

4625. (*Lt.-Gen. Scarlett.*) In fining a man for drunkenness, do you mean that that should be accompanied by any imprisonment at the will of the commanding officer?—I should say so, according to the number of offences. The commanding officer would be guided by the number of entries in the defaulters' book.

4626. What extent of imprisonment would you allow the commanding officer to inflict in addition to the fine, if regimental courts-martial were done away with, or without doing away with them altogether?—I think the present powers are sufficient. He can give seven days' solitary imprisonment or imprisonment in the cells; but the confinement to barracks is much beyond that, it is 28 days, and then there is heavy marching order drill.

4627. (*Chairman.*) Have you any suggestion to make with regard to the mode of dealing with non-commissioned officers?—I think they should be removed from the unfavourable position in which they now stand as to being tried, which goes against them for good service pensions.

4628. What alteration do you suggest?—I would allow the commanding officer the power of reducing a serjeant. Perhaps it might be advisable that it should be subject to the approval of the general commanding the division.

4629. Would you give the commanding officer the power of reducing him to the ranks?—Yes, without a court-martial.

4630. Would you give the non-commissioned officer the power of appealing to a court-martial in such a case?—It is a dangerous thing to allow appeals, except in matters connected with pay.

4631. (*Lt.-Gen. Scarlett.*) Would you allow the non-commissioned officer to be reduced by the commanding officer for crime, or merely for inefficiency?—For both; for dereliction of duty or for inefficiency.

4632. (*Lt.-Gen. Peel.*) But your object in proposing that is in favour of the non-commissioned officer, I understand?—It originated in that.

4633. Then if he appealed for a court-martial, it would be according to his own wish to be subject to the court-martial?—Yes; individuals might prefer it, but still I think it might perhaps make the authority of the commanding officer questionable if the right of appeal was permitted.

4634. But you are giving a commanding officer greater power than hitherto, and therefore, if the man appealed against the decision of the commanding officer, he would be doing it at his own risk?—No doubt.

4635. (*Maj.-Gen. Horsford.*) If you give that power to the private, why should you not give it to the serjeant as regards stoppage of pay?—It is a matter for consideration. I have not thought over it beforehand.

4636. (*Lt.-Gen. Scarlett.*) If a man is reduced for inefficiency, would you give him the right of appeal to a court-martial?—I was against giving him it, viz., the right, at all, but it might be granted. It is a thing which I have not thought over.

4637. (*Chairman.*) At the present time I believe there is no power of reducing a serjeant to be a corporal?—No.

4638. Would you recommend that that should be adopted?—I think it is better if a man is reduced that he should go to the ranks.

4639. Have you ever known a case of a serjeant who, having been found a very excellent corporal, is not a very efficient serjeant?—I have known men of that kind brought on more perhaps on account of their seniority than anything else. There are cases where it may happen that a serjeant may be reduced to the ranks, but if he is a very good man he would at once get into the corporal's rank again.

4640. Is it not desirable that the commanding officer, if he has made a mistake in appointing a man to be a serjeant from the rank of corporal, should have the power of replacing him as corporal without degrading him in the eyes of the soldiers?—I see no objection to it.

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4641. Do you think there are any circumstances under which a serjeant should be allowed to resign his post and accept of a lower grade?—I think it might happen that a sergeant might be allowed to resign for a lower position, and the commanding officer should have the power, I think, of reducing a staff-serjeant in his regiment to the rank of serjeant. At present he cannot do that.

4642. A full colonel can, I believe?—Yes; but he may be in England, and the regiment may be in the East Indies or in the West Indies.

4643. (*Lt.-Gen. Peel.*) Lance-serjeants return to the rank of corporal, do they not?—The rank of lance-serjeant is only an acting appointment like the rank of a brigadier-general.

4644. (*Chairman.*) With regard to punishment, does your experience in India lead you to believe that there is a power of carrying out effectually all the punishments to which a soldier can be sentenced?—I know there is a very good military prison in Madras; and in Bengal there are three, one for the southern division of the army, one centrally situated, and one in the north; at Hazarebagh, Lucknow, and Sealkote.

4645. (*Chairman.*) Now that corporal punishment is abolished in India as well as in England, do you believe that there will be sufficient means to carry out any punishment that may be substituted for it, such as imprisonment, solitary confinement, and hard labour?—Long imprisonment in India is a dreadful thing, on account of the climate. You cannot give hard labour in the hot weather; a man cannot go through it; it becomes simple imprisonment then.

4646. What are the punishments?—Solitary confinement, simple imprisonment, and imprisonment with hard labour.

4647. (*Capt. Vivian.*) Was there much flogging in the Indian army before it was abolished?—Not much; they were generally cases of disgraceful conduct.

4648. Can you give us any figures as to that?—Not without returns; but I should think the returns might be got from the Adjutant-General's department of the Horse Guards if necessary.

4649. (*Chairman.*) What is the chief punishment for serious crimes in India?—The court-martial is generally guided by the season of the year; there is a medical certificate. In the hot weather a man is not allowed to go through hard labour at all; it is then simple imprisonment. Solitary confinement is a tremendous trial too where the prisons are in the plains, but I believe that it is intended to have a large prison built on one of the hill stations. Really, now that flogging is done away with, I think it will be absolutely necessary to have a good military prison in the hills where men can undergo punishment.

4650. You think that there are not the means of inflicting any severe punishment with safety to a man's health?—Not in the plains.

4651. (*Mr. Whitbread.*) Are the prisons in India in which the men are imprisoned now on the cell system, or are they associated?—A man may be put in a cell, or he may be associated with others.

4652. Is every man who goes into the prison necessarily kept separate?—They are all together at certain times during the day. The hard labour is the same as in England, I believe, shot drill and knapsack drill and cleaning.

4653. You are aware that the fact of being associated together is always regarded by prisoners as a great boon?—Of course.

4654. And that what they dislike is being kept separately?—Yes.

4655. (*Chairman.*) From your experience should you say that there is any great delay in the confirmation of the sentences of general courts-martial in India?—Not more than is absolutely necessary, I think.

4656. What should you say is the longest delay to which a soldier who happens to be acquitted can be subject before he is released?—Supposing the headquarters to be at Calcutta, and the trial takes place at Peshawur, it would be a matter of six days' post there and six days' back, but the railways are increasing every day, and it may be less now.

4657. But when a soldier is acquitted, would he have to remain in custody for that number of days?—Yes, or it might be telegraphed.

4658. Where would he be kept during the time?—He would be kept with his regiment in confinement with the other prisoners, even though he had been acquitted.

4659. Could you suggest any reason why a man when he is acquitted should not be released?—I really do not see why he should not. He knows himself pretty well whether he is acquitted or not, because if a man is acquitted the previous convictions are not called for.

4660. (*Lt.-Gen. Peel.*) That is in the case of an old offender; but supposing that a man is tried for the first time, does he know whether or not he is acquitted?—Still the question is always put, whether there are any previous convictions.

4661. (*Capt. Vivian.*) Is not that question asked before the finding of the court?—No, they take evidence about character for the purpose of punishment after a man is found guilty.

4662. (*Lt.-Gen. Scarlett.*) Would you make the decision of the court final in that case without any revision?—I think in case of acquittal there is no reason on earth why it should not be final. The senior officer on the spot might carry out the finding; but then of course it does away with the power of the revising officer to re-assemble a court to reconsider its finding. If you take away the power of a revising officer to re-assemble a court for that purpose, then there is no reason why a man on acquittal should not be at once released.

4663. (*Chairman.*) Might he not be released subject to the power of being brought up again?—I think not. It is a well-understood custom that if a man is once released he is free. The offence would be condoned by it, according to the custom of the service.

4664. When a soldier is subject to a trial by court-martial, I believe he may not perform any act of duty, and if he performs any act of duty it releases him from such court-martial?—It condones the offence.

4665. Do you think that it is a necessary regulation?—I never could see the reason for it.

4666. Do you think that any limitation might be put upon it, and that a soldier might be called upon to perform common duties without his offence being condoned; would there be any objection in the way of discipline to it?—I think it is as well avoided; I do not see any reason for it.

4667. But the services of that soldier are lost and other soldiers have to perform the common duties of the barrack, for instance, till his court-martial is held?—Yes.

4668. What is the objection to a soldier performing the common duties of a barrack simply because he is subject to be tried by a court-martial?—It is a difficult question to answer.

4669. I believe the slightest act of duty would condone the offence?—That is the custom at present, and I think it is a very strongly rooted feeling in the army, though I do not see any reason for it.

4670. (*Lt.-Gen. Eyre.*) On the other hand, in the navy a seaman does his duty under those circumstances, does he not?—Yes, but that may be so in the navy. There appears to be no reason for the contrary custom in the army.*

4671. (*Lt.-Gen. Scarlett.*) Have you any punishment to suggest, instead of corporal punishment, for immediate and violent insubordination?—It is hard

* In considering this subject, it has since occurred to me that, *unless kept in confinement*, a soldier of a violent disposition, with a charge hanging over him, might be led, while under the influence of drink, to commit some further crime of an aggravated character; it appears to me, therefore, that it would be dangerous to release from confinement any soldier charged with a crime likely to lead to his trial.

to find a substitute for it; the only thing would be that a man might have 24 to 48 hours in solitary confinement in irons. That is a very good punishment.

4672. (*Lt.-Gen. Eyre.*) It has been mentioned by a witness on Indian subjects that, in the event of regimental courts-martial being done away with, a regiment would never be so isolated as to derive inconvenience from that circumstance. Would that apply in the case of Hong Kong, for instance, or such places as that?—A regiment on the line of march may be 20 or 30 days perhaps marching between one station and another, and a man might be a prisoner all that time. There are many places, such as Ceylon and Hong Kong, where there is only one regiment. If it is only as a school for young officers, I think that regimental courts-martial are very useful, because they learn there the duties of the higher tribunals of district and general courts-martial.

4673. As having commanded two regiments and having been Adjutant-General for five years, and thereby knowing the discipline of regiments in a general way, do you think that the hands of commanding officers should be strengthened now, by enabling them more easily to get rid of their bad men?—I think it is a most essential point. At present men come back to regiments who have undergone penal servitude, and who really are not fit to associate with others. Nothing can be worse for the *morale* of a corps than to have those men associated with your good soldiers. I do not know anything that is more disgusting to a good soldier than to find himself perhaps in the next cot to a man who has just come back from penal servitude.

4674. (*Chairman.*) Have you any further suggestions to make to the Commission?—I think there ought to be every facility given to commanding officers to get rid of bad characters.

4675. (*Lt.-Gen. Scarlett.*) How would you prevent those bad characters from enlisting in other regiments?—By marking them. I think that the facilities for marking them and getting rid of them should be greatly increased.

4676. (*Marquis of Hartington.*) You could not mark a man without trying him, I suppose, could you?—I suppose not.

4677. So that what you say about extending the facilities for getting rid of bad characters would really apply to getting rid of bad characters after they had committed some offence?—Of course.

4678. (*Lt.-Gen. Peel.*) Who has the power now of refusing to re-engage a man after the termination of his first period of service?—I believe the Articles of War empower the commanding officer to refuse, but the Judge Advocate-General could answer that question better than I could.

4679. That is a power which he has of preventing bad men from remaining in his regiment, is it not?—Yes.

4680. (*Mr. Whitbread.*) Would it be possible to have in the army a system of probationary enlistment, the same as is now in force in the navy?—I think it would be a very good plan, because in a month you would find out pretty well what a man was made of; but if got rid of it must be borne in mind that he would probably enlist in some other corps for the sake of the bounty.

4681. (*Chairman*). Have you any other suggestion to make with regard to courts-martial?—With regard to the punishment for non-commissioned officers, I think there is no other punishment for them but reprimand. I think placing them down in the list, which I heard canvassed the other day, is no punishment at all, because you do not feel yourself bound to select the senior; you take a good man if he is a long way down the list sometimes.

4682. Would you recommend any punishment such as fining non-commissioned officers?—No, because then they could not pay their mess bills. As it is, it is as much as they can do to pay their mess bills.

4683. Would it not be a punishment to take them away from the serjeants' mess?—Then they would have to take their meals with the privates, and I do not think that would be a good thing at all.

4684. (*Marquis of Hartington.*) You would not recommend that a court-martial should have the power of punishing a non-commissioned officer as a non-commissioned officer without reducing him?—No.

4685. (*Mr. Mowbray.*) Then would you propose to alter No. 763 of the Queen's Regulations, by which it is forbidden to reprimand a non-commissioned officer by sentence of court-martial?—I meant that he should be reprimanded by the commanding officer.

4586. (*Chairman.*) Why should any distinction be made as to reprimand between officers and non-commissioned officers?—A non-commissioned officer can be reprimanded by his commanding officer; there is no real use in trying him if a court-martial could only do the same.

4687. But a court-martial can reprimand a commissioned officer, why should it not have the same power with reference to a non-commissioned officer?—The commissioned officer pays for his position and the non-commissioned officer does not.

4688. (*Mr. Mowbray.*) Supposing the court-martial is of opinion that a reprimand is an adequate punishment for the offence committed by a non-commissioned officer, is there any reason why it should be precluded from awarding such punishment?—No other than that the commanding officer can do it, and if he could do it he would probably not have brought him before the court-martial unless he considered that the non-commissioned officer deserved a higher punishment.

4689. Then you would hold it in all cases imperative upon a court-martial to award a higher sentence than could have been awarded by the commanding officer without a court-martial?—I think so.

4690. (*Chairman.*) With regard to courts of inquiry in India, what is your opinion?—In India courts of inquiry save an immensity of reference, because there used to be strict orders about their going minutely into every case they had.

4691. First of all, will you state what is the chief object of a court of inquiry?—To elicit evidence. I allude to those courts which are assembled for the purpose of investigating cases which are likely to lead to courts-martial. Those courts are assembled with very strict orders to take every evidence they can bearing upon the question. They give no opinion, but they merely record the evidence, and it comes up to the Commander-in-Chief and enables him to judge of the merits of the case, whether the charges can be proved or not. It saves a great deal of time, and it prevents reference backwards and forwards. That is a great point in a large country like India, where the head quarters may be so far from out stations.

4692. Is there not another object in a court of inquiry, viz., to enable the Commander-in-Chief to exercise the prerogative of the Crown, where there may be some defects in an officer which might not subject him to a court-martial?—A court of inquiry is never assembled for that purpose. So much may come out in a court of inquiry as may, perhaps, lead the Commander-in-Chief to put it to a man whether it would not be to his advantage to leave the service. I have known cases of that kind.

4693. Have you ever known any cases where circumstances have come out before a court of inquiry which have led the Commander-in-Chief to believe that it is for the interest of the service that the officer should be discontinued from his command?—I do not recollect any such case occurring when I was Adjutant-General.

4694. (*Lt.-Gen. Peel.*) But the Commander-in-Chief, or whoever appoints the court of inquiry, is responsible for any action which he takes upon that court of inquiry, is he not?—Of course the Commander-in-Chief is responsible for all his acts.

4695. But the court of inquiry have no responsibility upon them, have they, beyond giving a report

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of the evidence?—They have no responsibility beyond that of eliciting all the evidence they can on both sides.

4696. And it does not relieve the Commander-in-Chief or anybody from the slightest responsibility in acting upon the report of that court of inquiry?—Not in the least.

4697. (*Chairman.*) Do you think that courts of inquiry are of great service?—Of very great service, for the reason that they often save reference. When one man inquires into a case he may lose sight of some points in it; but when the case is inquired into by a board of officers (which it would be more properly called, perhaps, than a court), there is not the same danger.

4698. From your experience have the results of courts of inquiry in India led subsequently to courts-martial?—They have elicited evidence upon which charges have been framed.

4699. Have there been many instances where the Commander-in-Chief in India has acted upon a court of inquiry without referring the case to a court-martial?—I cannot recall one such instance, except in the sense of my reply to 4692.

4700. Supposing that in India a court of inquiry was summoned to inquire into the competency of an officer to discharge his duties, and that court was to express its opinion that the constitution of the individual was such that it was not for the benefit of the service that he should continue in the command which he held, would the Commander-in-Chief in India have the power to suspend that officer from his command without a court-martial?—I do not think that I have ever known a case of a court of inquiry being assembled for the purpose of testing the powers of an individual.

4701. (*Lt.-Gen. Peel.*) But the Commander-in-Chief in India has not the power of exercising the prerogative of the Crown, has he?—He could suspend an officer, and refer it home.

4702. The Commander-in-Chief in India cannot remove a man from a regiment without reporting it home?—He could not.

4703. And the prerogative of the Crown is only exercised by the authority of the Secretary of State for War?—Yes.

4704. (*Chairman.*) Are you of opinion then that it is absolutely necessary that courts of inquiry should be maintained?—I am.

4705. Could you suggest any alteration in the conduct of them?—No, I think that they should be maintained exactly as they are. I do not know whether in England the Deputy Judge Advocates attend such courts; but in India the Deputy Judge Advocate-General of Division attends if the case requires it.

4706. The courts of inquiry in India are carried on under the same rules as they are in this country, are they not?—Exactly the same.

The witness withdrew.

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LIEUT.-GENERAL SIR JAMES YORKE SCARLETT, K.C.B., a Member of the Commission, examined.

4707. (*Chairman.*) You have heard the evidence which has been given before this Commission, would you favour the Commission with any opinions which you may entertain with regard to the recommendations which have been made to us?—To begin with regimental courts-martial as the simplest. I rather consider a regimental court-martial to be a shield for the soldier from any overbearing conduct towards him of his commanding officer; but if you look at it in the other light, as being an instrument of punishment by the commanding officer, you place in the hands of a captain and two inferior officers the power of the commanding officer himself. Therefore I think that I myself should be rather inclined to do away with regimental courts-martial.

4708. Would you not reserve it under any exceptional circumstances?—I would extend the commanding officer's power, and I would give an appeal to the soldier to a district court-martial upon all occasions where the punishment exceeded the present punishment in use.

4709. You would not give the soldier the option of an appeal to a regimental or a district court-martial?—No; he must appeal to a district court-martial.

4710. What objection would you have to his appealing to a regimental court-martial?—Because, in that case, he appeals from the commanding officer to the officers who are subordinate to him. It brings a commanding officer and those subordinate officers in opposition to each other. There is an objection to what I propose, and the difficulty would be the assembling of a district court-martial which might frequently arise.

4711. Would that be a serious difficulty?—I think that there would be no difficulty in such a place as Aldershot; but it would be very difficult where a regiment was isolated.

4712. Would it subject the public to much expense?—It would subject the public to some expense.

4713. Would that expense be serious?—I should say not very serious.

4714. Would there be much delay in carrying that out?—There would be some delay, but not very much.

4715. (*Marquis of Hartington.*) In what instances do you think it would be inconvenient?—Where a regiment, perhaps, was quartered at Coventry, if the head-quarters were at Coventry, they must send to Birmingham, or to some other place to collect officers for a district court-martial.

4716. But would not the inconvenience be most seriously felt at some foreign stations?—Yes, unless there were a certain number of regiments quartered there.

4717. Is there any case where one regiment is quartered alone at any foreign station?—I am not quite prepared to say that at the moment.

4718. (*Chairman.*) Have you any suggestion to make with regard to district courts-martial?—The object of a district court-martial is simply to give a higher punishment than is in the power of a regimental court-martial. With regard to district courts-martial I have nothing say. I think that justice is very well administered by district courts-martial, and that it is only necessary in a complicated case to call in a Deputy Judge Advocate.

4719. What is the rule with regard to the calling in of a Deputy Judge Advocate now?—At present you do not call in a Deputy Judge Advocate upon a district court-martial at all. I have never known an instance upon a district court-martial of a Deputy Judge Advocate being called in.

4720. Who does the work of the Deputy Judge Advocate?—The president of the court acts in those cases.

4721. Have you ever known inconvenience to arise from the president of the court acting in such a manner?—No, I am not aware of any serious inconvenience having arisen. Cases generally which go before a district court-martial are very simple, but occasionally there is a difficulty when it comes to accounts.

4722. With regard to accounts, you have heard it suggested that cases of embezzlement should be subjected more to the civil tribunals than they are now, do you agree with that?—I think that all cases of great importance between paymasters and Secretary of State for War should be tried by the civil power, but I think that the simpler cases between the captain of a company and his serjeant might be tried by a district court-martial.

4723. (*Marquis of Hartington.*) Would it be easy to lay down the distinction between those two classes of cases?—I think so.

4724. (*Chairman.*) What line would you draw?—If it was a pay-serjeant who had embezzled money intrusted to him by his captain it is generally but a small sum, and I think that the evidence is so plain usually that there is no occasion for anything superior in knowledge to a military court-martial.

4725. (*Maj.-Gen. Horsford.*) Would you leave it to the colonel to put it into a civil court when he wished?—I would.

4726. (*Lt.-Gen. Peel.*) If the power of the commanding officer was extended do you think that any scale of punishment could be adopted?—Yes, I think that some scale of punishments might be adopted, giving a higher power to the commanding officer than he has now, but not to a greater extent than is now given to regimental courts-martial.

4727. So as to assimilate the punishments of different regiments as much as possible?—Yes, I think that that would be very desirable.

4728. (*Viscount Eversley.*) Is there not one objection to a district court-martial not being attended by a Deputy Judge Advocate, that the proceedings now go up to the Judge Advocate-General, and are sometimes annulled by him for some informality after the sentence has been partially carried out?—That has occurred, certainly.

4729. (*Mr. Mowbray.*) Not unfrequently?—I will not say that it has occurred very frequently, but several such cases have come under my knowledge.

4730. Do you think it desirable that the proceedings of district courts-martial should be submitted to the Deputy Judge Advocate of the district before confirmation?—I should have no objection whatever to that.

4731. And it would not occasion any serious delay, would it?—It might occasion a day or two's delay.

4732. (*Chairman.*) You have heard the opinions given before the Commission with regard to the revision of findings and sentences of courts-martial, have you anything to say upon that subject?—I think that it is a most useful power to have.

4733. Whether for aggravation, or otherwise?—Whether for aggravation, or otherwise, because I consider that occasionally a court takes a wrong view of the evidence, and upon reflection they may take a different view, both as to the finding and also as regards the sentence.

4734. That naturally would suggest the idea that the court is not quite a competent court; do you believe that that arises from what has been stated by the witnesses as to the confused nature of the Mutiny Act and the Articles of War and the Queen's Regulations, or do you think that it arises from officers not being sufficiently up in military law and the usages of the army?—I think that it arises partly from the confused way in which military law is put before us, though it is simple enough if it was properly brought before us; and I think that it arises partly from officers not being very good judges of evidence. I think that the mere law they understand, but sometimes they are not sufficiently good judges of the weight of evidence and the value of evidence.

4735. Do you think that the remedy for that might not be found on the one hand in simplifying military law, and, as regards a knowledge of the law of evidence, by a stricter examination of the officers upon that subject being enforced?—I think the more the law is simplified the better. I do not think that any instruction which you can give an officer will teach him to weigh evidence, because he has not practice enough; but I think that a text book of some kind, laying down a few simple rules of evidence, would be very useful.

4736. Do you think that it would be possible to find a text book which should deal simply with the laws of evidence?—I think that it might be done.

4737. To whom would you submit the consideration of that subject?—I should submit it to some person learned in the law, who would undertake it and endeavour to explain it simply.

4738. It must be necessarily somebody who is also conversant with courts-martial, must it not?—It must be somebody who is also conversant with courts-martial. It happens sometimes that a man is accused of striking a non-commissioned officer. A non-commissioned officer comes forward and swears positively that that man was struck. Two men who were in company with the offender come forward and give evidence and say that he was not struck. Then the court-martial is very much puzzled. I have known them give it both ways. Sometimes they believe one and sometimes they believe the other; but if they believe that the man was not struck, the corporal or the serjeant who says that he has been struck must have committed perjury.

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4739. (*Mr. Mowbray.*) No text book can guide them in that case, but they have to choose between two individuals, and settle which class of witnesses has committed perjury?—Yes; but I should say that there was more weight to be attached to the evidence of the man in the superior situation, and who was in the execution of his duty, than to the comrades of the man who was accused.

4740. (*Chairman.*) Would you lay that down as a rule to guide courts?—No; I should mention that as an instance where they should weigh the evidence very carefully, and not decide in a hurry upon the matter, but I could not lay it down as a positive rule.

4741. Do you know any instances where the revision of a court-martial, with a view to finding a man guilty who had been acquitted, was absolutely essential for the discipline or the good of the army?—I was president of a general court-martial myself which acquitted an officer. The court was revised by the late Lord Hardinge, and they then found him guilty.

4742. Did that case involve any point which was very material to the discipline of the army?—Yes, I think it did, and I think that it would have been injurious to the discipline of the army if that officer had been acquitted.

4743. You do not think that the public in viewing his acquittal would have attributed it to the misunderstanding of the court?—I myself think that, if they had read the evidence, they would have attributed it to the misunderstanding of the court.

4744. Do you see any other objection than that to which you have alluded, to a man being immediately released on his acquittal by a court-martial?—I see no other objection.

4745. Have you, in your experience, become acquainted with cases of hardship, where a man has been confined for any length of time after acquittal while awaiting the confirmation of the sentence?—Not of late years, but formerly I have known a may confined for a long time in the guard-room.

4746. (*Mr. Mowbray.*) All that is now done away with, is it not?—That I believe is all done away with now.

4747. (*Chairman.*) With regard to the punishments of the army, have you any suggestions to make?—I am very much averse to long imprisonments, and I think that some alteration might be made as to the punishment for habitual drunkenness.

4748. For long imprisonment what would you substitute?—I would substitute a rather more severe imprisonment. I should give them worse diet and more work; but I would not make the imprisonment so long as it is, and I would use solitary confinement more frequently.

4749. (*Viscount Eversley.*) Would it not be necessary then to improve all the military prisons?—It would be necessary to have cells in which you might carry out solitary confinement.

4750. And the means of giving hard labour in the prison?—The means of giving hard labour in the prison.

4751. (*Chairman.*) Have you had much experience of the accumulation of punishments in the army?—Yes; I have known men who have been imprisoned for three or four months, and at the end of the imprisonment re-imprisoned for some other offence which

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they have committed, so that it amounted to a year or two years.

4752. Have you found any inconvenience or objection to that?—The man is lost to the service during that time, and I do not consider that the long imprisonment reforms him in any way.

4753. From your experience what should you say is the punishment that a soldier dreads the most?—I should say that, next to corporal punishment, which is abolished, he most dreads solitary confinement.

4754. In the different quarters where you have been, have you had the power of carrying out these punishments?—In some quarters we have, but not in others. At Aldershot we cannot carry them out; at Portsmouth we could do so, and I believe they can do so at Weedon.

4755. Can they be carried out in the different districts of England according to your experience?—I am not aware what they can do at Fort Clarence or the other prisons.

4756. Is it your opinion that now that corporal punishment has been abolished it will be necessary to increase the means of inflicting military punishments?—I cannot suggest anything more than the improvement of the military prisons.

4757. You do not think that it will be necessary to increase them?—I do not.

4758. With regard to the punishment itself, what is your opinion?—I think that, for insubordination, you want an immediate punishment, and I do not know any better than that which has been suggested by some previous witnesses, viz., placing a man for 24 hours in irons before you deal with him for the offence.

4759. Will it be possible to carry that out; you have no power now, I believe, of punishing a man for insubordination unless he is convicted of it?—When a man has committed a crime you place him at once in the guard-room, or you may place him in the cells.

4760. That is the power which exists at the present moment?—Yes.

4761. But it will be a serious increase of that power, will it not, if you put him in irons also before he is tried?—I consider that you must have some power of repressing violent insubordination. Violent insubordination is generally committed by men who must be dealt with very promptly.

4762. Do you think that that would be a safe power to intrust to all commanding officers?—I think it would be a safe power, such cases always being reported, when they take place, to the General commanding the district.

4763. As to courts-martial, have you any other recommendations to make?—No; I quite agree with those who would exclude as much as possible legal assistants from courts, still admitting them for the prisoner, as at present, where they desire it.

4764. But you would object to their being allowed to address the court on behalf of the prisoner?—I would object to persons addressing the court on either side, either on behalf of the prisoner or against the prisoner.

4765. Do you agree with the opinions of some of the witnesses, that the prosecutor should be deprived also of the power of addressing the court?—I think that the prosecutor, in a general court-martial in a serious case, ought to be allowed to state the grounds upon which the prisoner is brought before the court, but I think that the president should stop him if he goes beyond that and argues the case.

4766. Would you retain to him the power which he has now of summing up the evidence?—I do not see any great objection to it, but I do not think it is necessary, because I think that the president and the Judge Advocate are quite sufficient for that without his doing it.

4767. (*Lt.-Gen. Eyre.*) Would you object to the prisoner having the last word?—I should have no objection to that.

4768. (*Chairman.*) Will you state what your view is as to courts of inquiry?—My idea is that we could not do without courts of inquiry, and that they are absolutely necessary for the collection of evidence and for giving information to the commanding officer, or the general officer, or the Commander-in-Chief, or whoever it happens to be. There are some subjects which are of a very delicate nature which require an investigation of that kind to decide whether you will bring a man to a court-martial or whether you will endeavour to deal with him by some more lenient course. Then, of course, there are many courts of inquiry which are made upon a variety of subjects which you perhaps did not allude to so much. You have courts of inquiry upon waggons that break down and upon guns that break down, and a variety of technical things of that kind, and upon a man who maims himself, though you may bring a man to a court-martial for that.

4769. A court of inquiry never awards any sentence, does it?—A court of inquiry has no power to award any sentence at all. It is only to collect evidence, and, if it is desired, it gives an opinion; but the person who convenes the court is entirely responsible for what takes place upon it.

4770. Would you suggest any alteration in the mode of conducting the court?—I do not consider it necessary to make any alteration. The person whose conduct is inquired into generally has the option of being present and hearing all that is said against him, and of calling any evidence which he pleases to refute what is said, and to defend himself.

4771. (*Lt.-Gen. Eyre.*) In some instances courts of inquiry are directed, not only to investigate, but also to express an opinion; in other cases they are simply ordered to record such facts as they can ascertain for the information of the party who orders the court; do you approve of both of those kinds of courts of inquiry?—Yes, I do with both of them.

4772. You do not see any objection to the order to give an opinion?—I see no objection to the order to give an opinion if it is considered necessary. Very often the opinions of officers of very high rank and station, and of undoubted honour, are of very great use for the guidance of the Commander-in-Chief, or the person to whom the court is referred.

4773. (*Maj.-Gen. Horsford.*) What is your opinion as to the number of officers on a court-martial?—I am inclined to diminish the number, and to keep them as low as possible, because I think it increases the responsibility; but I would have young officers attend in the room frequently, that they may learn the duties.

4774. As supernumeraries up to the rank of lieutenant?—Yes.

4775. (*Lt.-Gen. Peel.*) That would be more necessary if regimental courts-martial were done away with, would it not?—It would. I am not very strong upon the point of regimental courts-martial being done away with.

4776. (*Mr. Mowbray.*) What number should you prefer for a general court-martial, seven or five?—Seven, I think. I should prefer five, but I think that seven is more reasonable, because some of them may be ill.

4777. Would you be satisfied with seven, with power for the court to decide if their numbers were reduced by absence, or illness, to five?—I would be satisfied with five then.

Adjourned to Monday next at 12 o'clock.

Room E. House of Lords.

Monday, 15th June 1868.

PRESENT:

COLONEL THE RIGHT HON. JOHN WILSON PATTEN IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
LIEUT.-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. THOMAS E. HEADLAM.
THE RIGHT HON. RUSSELL GURNEY.
LIEUT.-GENERAL SIR J. YORKE SCARLETT, K.C.B.
MAJOR-GENERAL SIR ALFRED HASTINGS HORSFORD, K.C.B.
LIEUT.-GENERAL HENRY EYRE.
COLONEL S. N. LOWDER, C.B.
CAPTAIN THE HON. J. C. W. VIVIAN.
SAMUEL WHITBREAD, ESQ.
JOHN LLOYD WHARTON, ESQ., *Secretary*.

MAJOR-GENERAL JOHN E. STUDHOLM BROWNRIGG, C.B., called in and examined.

Major-Gen. J. E. S. Brownrigg, C.B.

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4778. (*Chairman.*) Will you state what posts you have held in the army?—I was for five years adjutant of a regiment of the line; I was for nine years regimental adjutant of the Grenadier Guards; I served during the greater part of the Crimean campaign as Assistant Adjutant-General, first of all of the first and subsequently of the light division; my appointment previous to the one which I now hold was Deputy Adjutant-General in Ireland, which office I held for about five years; and I am now in command of the troops at Shorncliffe.

4779. You are aware of the object of this Commission; have you any suggestions to make with reference to the present constitutional practice of courts-martial, taking first general courts-martial?—I think that the number of members might be reduced.

4780. To what would you reduce them?—I should reduce them to seven. I think that that number would be quite sufficient at a general court-martial.

4781. To what would you reduce the number of a district court-martial?—To five.

4782. And to what would you reduce the number of a regimental court-martial?—I should like to see regimental courts-martial done away with altogether, provided you put sufficient power into the hands of the commanding officer.

4783. With regard to general courts-martial, what other alteration would you suggest?—I would suggest that in every case where the prisoner had legal assistance the prosecutor should have legal assistance also. It puts the prosecutor into a most unfair position if he has not legal assistance as well as the prisoner.

4784. But cannot the prosecutor now have legal assistance in the court, provided his legal adviser does not address the court?—I imagine not, unless he pays for it out of his own pocket.

4785. Will you state any inconveniences which you have known to arise from the prosecutor's not having a legal adviser?—His want of law places him completely at the mercy, if I may say so, of the prisoner's counsel or advocate; the prosecutor is thus put in a position in which I do not think he should fairly be put. I think the prosecutor should have legal assistance where the prisoner has it, but not otherwise.

4786. Do you think that it would tend to the promotion of justice or increase the efficiency of courts-martial if both parties were allowed legal advice with a power on each side to address the court?—I see no objection to it, but I would rather that neither should have a legal adviser, because I think that it only complicates the matter excessively. I think that a court-martial is a rough and ready way of doing justice to all who are brought before it, and that matters are only made extremely difficult by having legal advisers on either side. Justice is invariably done by courts-martial, or at least the cases are very rare I should think where it is not.

4787. Do you think that in any of the cases in which you have had experience justice has failed in consequence of the want of a legal adviser on the part of the prosecutor?—I think that justice has failed.

4788. Has that been by means of the cross-examination of witnesses which has been carried on by the prisoner?—It has arisen from the proceedings of a court-martial which I am aware of having been quashed in consequence as it was stated of the illegal nature of the proceedings. I conclude that had the prosecutor had a legal adviser, at all events any illegality on his part, if any such occurred, would have been avoided.

4789. Do you recollect in what the illegality consisted in that case?—I only remember generally in the case to which I am alluding that the prisoner was convicted; that he was sentenced to be cashiered, that it created a great excitement, and nearly all the press took the matter up, and it ended in the prisoner being released, and almost everybody being reprimanded but the prisoner. He was the only man who appeared to me to get off scot free.

4790. (*Capt. Vivian.*) Was that on account of some illegality in the proceedings?—It was so stated.

4791. Did either the prosecutor or any member of the court know what that illegality was?—I have some remembrance that it was stated in the observations which accompanied the court-martial when the finding and sentence were returned for publication; but I do not think that the reasons were very much entered into.

4792. (*Chairman.*) Do you think that the difficulty would have been got over without detriment to the service if the prosecutor on all those occasions had had a legal education?—I think that his difficulties would have been very much lessened.

4793. Would you advise under any circumstances that there should be a prosecutor who has had a strict legal education?—I think that in the generality of instances it would be quite unnecessary, but cases do occasionally arise in which certainly it would be very advisable to retain the services of a prosecutor of that description.

4794. Is it your opinion that the officers of the army generally are sufficiently instructed in military law, especially with regard to the laws of evidence?—I think they are, unless they are pitted against a trained lawyer, in which case they have no chance.

4795. I understand you to say that you would not recommend that there should be any professional man engaged on behalf of the prosecutor, unless one was engaged on the other side?—That is my opinion.

4796. And you think that it would be but fair, if legal advice was required, that the public should be at the expense of the advice?—I think that leaving the military prosecutor without such advice is exceedingly unfair.

4797. (*Capt. Vivian.*) How is the prosecutor at present generally chosen?—On the trial of an officer I think the commanding officer of his regiment is usually the prosecutor. He has had the advantage of a preliminary investigation of the subject, and he knows the circumstances of the case; but it very often occurs that a staff officer is chosen as prosecutor.

4798. Is the officer selected by the general officer commanding the district?—I think so generally.

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4799. Have you ever been a prosecutor on a trial yourself?—I have.

4800. Were you commanding officer of the regiment at that time?—No. I was Deputy Adjutant-General in Ireland.

4801. How did it happen that you became prosecutor?—Because the preliminary investigation of the case which led to the trial of the officer had been taken before me. His commanding officer reported him to me, and I then sent for the officer who was accused, and it was in consequence of that, I fancy, that I was appointed prosecutor.

4802. By the Commander-in-Chief in Ireland, I presume?—I think that on that occasion it was by order of the Horse Guards.

4803. (*Chairman.*) It is the usual practice, as I understand you, that the general commanding states who is to be the prosecutor on each court-martial?—I believe that to be the practice.

4804. Do you believe that to be a good practice?—I do not see any objection to it.

4805. Evidence has been given before this Commission both in favour of and against the present mode of taking down the evidence before courts-martial, and as to the delivery of the questions to the president in writing; do you think that the present mode of conducting the evidence before a court-martial is a good one?—It is very tedious.

4806. In the generality of general courts-martial is a shorthand writer admitted?—Never, I fancy, unless he is employed by either the prisoner or the prosecutor.

4807. He is not admitted as an officer of the court?—Not as an official attached to the court that I am aware of.

4808. Do you think that, provided the evidence in a general court-martial was taken down by a shorthand writer, the system of putting the questions in writing might be abandoned?—Certainly, with great advantage.

4809. It has been stated here that the system of putting the questions in writing tends rather than otherwise to the advantage of the prisoner, inasmuch as it gives the prisoner more time, and as no hasty questions can be put; do you concur in that view?—I think that a court is always very indulgent in giving a witness plenty of time to answer questions; but I have known instances, in the case of a nervous witness, in which I think that the taking down of evidence in writing, and going through all the ceremony of reading it afterwards, and of its being handed about to be looked at first of all by one member of the court and then by another before it is put, is very apt to confuse the witness, and the delay is sometimes almost ludicrous. I remember a case in which a very ordinary question was put; if I remember rightly, it was a question put by the prosecutor to a witness for the prosecution as to where the prisoner was when a certain occurrence took place. The prisoner, as advised by his counsel, objected to the question being put. The court was then closed, and remained closed I think for nearly half an hour; it was a crowded room, and there was a good deal of confusion in turning everybody out and getting them all in again, and then when it was decided with some considerable formality by the president that the prosecutor was at liberty to put the question to the witness, the answer was, after all this unnecessary delay, "I do not know," or "I forget," or something of that sort; all that would be saved if a *vivâ voce* examination took place.

4810. But at the same time might not that have been rather material to the prisoner if the question had been contrary to the laws of evidence?—It might. It led to discussion; but the matter was discussed by people who, I conceive, had a very small amount of legal knowledge to enable them to decide whether they were right in the opinion to which they came or not.

4811. Have you any alterations to suggest as to the part which the Deputy Judge Advocate should take in a court-martial?—I think the present arrangement is a great improvement upon the old system.

4812. What do you understand to be the present arrangement?—That there are officers detailed to perform the office of Judge Advocate for certain districts.

4813. But you do not allude to the part which he takes in the court?—No. I think it works very well as it is.

4814. With regard to the mode of decision of the court, the present practice being that the junior officer gives his opinion first, it has been suggested that that system might be improved by each officer delivering his opinion in writing to the president; should you approve of that?—Yes; I should approve of it, although I have seen no harm arise from the working of the present system.

4815. What do you suppose to be the benefit of the present system, under which the junior officer gives his opinion first?—That he is unbiassed by the opinion of those who are more experienced than himself.

4816. And you think that remark applies both to the finding and to the sentence?—I should say so.

4817. With regard to the sentence, would it not be desirable that the most experienced officers should carry weight with them in stating what the sentence should be?—I would rather leave the young officer to exercise his own discretion. He is always supposed to have a certain education in the matter as far as is afforded him by the Mutiny Act and the Articles of War, and he has been obliged to attend courts-martial as a supernumerary before he is permitted to sit on one on his own responsibility.

4818. (*Mr. Russell Gurney.*) Is it not the case that the subject is discussed before the members of the court are formally called upon for their opinion?—The proceedings of the court-martial are or should be read over.

4819. Is there not some discussion among the members of courts-martial, previously to the formal decision?—When there is a question of any difficulty there is a discussion.

4820. Then there is an opportunity of the junior officers hearing the opinions of the experienced members of the court previously to the formal decision being given, is there not?—There is to that extent.

4821. The junior officer knows perfectly well beforehand what the opinion of the experienced officers is, does he not?—Yes, I think that where there is any doubt or hesitation on the part of a young officer it would be rather the duty of the president to advise him.

4822. Is that quite consistent with what you were saying as to the advantage of calling for the opinion of the junior first, that he should give his opinion altogether unbiassed by the opinion of his seniors?—I think I said that practically the present system did not work badly, but that the suggestion of giving the votes in writing might be an improvement.

4823. (*Chairman.*) Do you think that in practice the opportunities which young officers have of studying military law and the practice of the army are sufficient for a proper performance of their duties as members of courts-martial?—No, I think they should study it more.

4824. How would you suggest that they should study it? Should it be before they have their commissions or while they hold their commissions, and by a public examination, or in what other way?—I do not see why the study of military law to a certain extent should not be a part of the education of any young man who proposes to enter the army; but if there is to be any change in the system, and it is contemplated to introduce a more educated element into courts-martial either by means of civilians, or as is now the case by having officers appointed as Deputy Judge Advocates to lay down the law; if that is to be the case, I do not know that the common rudimentary education which they get out of the Mutiny Act and the Articles of War would not be suffi-

cient. It appears to me that what to an ordinary person may seem to be a most simple and legal question, often turns out to be perfectly illegal in the opinion of those who are best qualified to decide. It requires, I should think, to understand really the technicalities of evidence, a far greater training than any officer is likely to have in that respect.

4825. In your experience, have the revisions of courts-martial arisen in any degree from the inexperience of officers in military law and in the usages of the army?—That has occurred sometimes, but I think that revisions usually occur in consequence of the revising officer considering that proper attention has not been paid or proper weight given to the evidence which has been adduced.

4826. You do not think that to any great extent it has arisen from want of knowledge on the part of the officers?—I think not, inasmuch as the revising officer knows little more of the law than the members of the court.

4827. At the same time he has the advantage in a general court-martial of the advice of the Judge Advocate-General, has he not?—I was not alluding to general courts-martial, but to district courts-martial. In the case of a general court-martial, I conclude that the Judge Advocate-General is the responsible person.

4828. But you do not think, as regards general courts-martial, that the revision has been rendered necessary by the want of knowledge on the part of the members of the court?—I think it certainly has in many instances.

4829. (*Mr. Russell Gurney.*) Before an officer obtains his commission, has he to pass any examination testing his knowledge of military law?—I am not aware that he has.

4830. Are you aware that with respect to the civil servants in India, they are now obliged to attend a certain number of trials, and to make a report of those trials as a part of their examination?—I was not aware of it.

4831. Do you think that it would be a good practice to introduce in respect to military officers, that they should acquire some little familiarity with the order of legal proceedings?—Practically that is done after an officer joins.

4832. Do you think that it would be a good thing to introduce a similar system to that which I have described with respect to officers of the army?—I should think that it would be unnecessary.

4833. Do you not think that they would acquire more familiarity in that way than by any amount of reading?—I think that they would probably learn just enough to make them dangerous.

4834. (*Capt. Vivian.*) Do not young officers now attend courts-martial as supernumeraries?—Invariably. I know an instance of the president of a court-martial who from a partial knowledge of civil law was led I think into very great errors. If he had known nothing at all about it he would have done much better.

4835. (*Mr. Russell Gurney.*) Does that apply to the law of evidence?—In the case I allude to it does, inasmuch as the prosecutor who wished to cross-examine a witness upon fresh evidence which had just been adduced was not permitted to do so until he had stated publicly that his object in doing so was to impugn the veracity of a witness who was an officer. That was a very disagreeable position to put the prosecutor in, whether it was a legal one or not I am not prepared to state, but the result was that before the prosecutor was enabled to cross-examine a certain witness, he was obliged to say publicly in court that he impugned his veracity, and the result was that shortly afterwards, when the court was closed for some time. the prosecutor received intimation that he was to be called out, first by the witness, and then by some friends of his who were all Irishmen.

4836. (*Chairman.*) As to revisions of courts-martial, do you think that it is necessary to maintain the present practice of revising a court-martial with a view to the aggravation of the punishment to which a prisoner has been sentenced?—I would never do that; I would revise the proceedings of a court to call their attention to any deficiency on their part in attending to the evidence. If they were satisfied that my observations were correct, I should leave it to themselves to increase the punishment of the prisoner, but I should hardly like to suggest it.

4837. In a case where a court have acquitted a prisoner, do you think it is necessary to maintain the power of revising the finding with a view to its alteration?—I should not like to see it done away with, for really the decisions of courts-martial, and particularly minor courts, are sometimes so extraordinary that it would be hardly safe altogether to do away with the power of revision. A case occurred to my own knowledge the other day when a soldier was tried; one of the charges against him being for tearing the shell jacket of another soldier. There was only this one man's evidence to the fact; nobody else was present. When the witness had given his evidence the prisoner declined to cross-examine him, and the court nevertheless acquitted the prisoner of that charge. They did not give the prosecutor any opportunity of putting in further evidence, and it appeared afterwards that in the preliminary investigation this man himself had acknowledged having torn the jacket, and had said that he was ready to pay for it.

4838. (*Mr. Headlam.*) Did they stop the prosecutor from putting in any further evidence?—Not exactly; but the prosecutor did not think it necessary, inasmuch as the prisoner did not cross-examine the witness.

4839. Was any application for permission to adduce further evidence refused by the court?—No, the court appeared to be satisfied, and told the witness he might go.

4840. (*Capt. Vivian.*) Did the witness swear directly to the fact?—Most directly.

4841. (*Chairman.*) In that case was the sentence revised?—The court was reassembled, but I am sorry to say the sentence was not revised.

4842. Was the opinion of the revising officer given in reassembling the court?—The attention of the court was drawn to the direct evidence of the witness as to the jacket being torn. The commanding officer of the regiment referred the case to me, and I thought it necessary to speak to the members of the court, and the way in which I put it to them was the dilemma in which their decision had put the witness, inasmuch as I wanted to know who was to pay for the jacket. It would have been very unfair to make the soldier whose jacket was torn pay for it when the prisoner had acknowledged that he had torn it and was willing to pay for it before his trial. I said that some reference must be made to superior authority as to how this jacket was to be paid for, and I understood subsequently that the court paid for the jacket themselves.

4843. (*Mr. Whitbread.*) Did you mention to the officers on ordering their reassembling that at a preliminary investigation the accused had volunteered to pay for the jacket?—I do not think I did. It is a very delicate matter to animadvert upon the proceedings of a court-martial, all the officers being sworn to administer justice impartially.

4844. (*Mr. Headlam.*) Was the preliminary examination before the court in any way, and was any evidence given on it?—No, it would not have been brought before the court by the prosecutor, if the court had not dismissed the witness after he had given his evidence.

4845. So that there was no judicial evidence before the court of the fact of this confession?—None whatever.

4846. (*Chairman*). Do you think that there are a sufficient number of instances of similar cases to the one which you have just mentioned to render it necessary to maintain the practice of revising the finding of a court-martial where a man has been acquitted?—I can only speak of my own experience, but I should

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fancy that if a thing of that sort has happened to me it has happened frequently to others.

4847. Did you ever hear of a case in which the discipline of the army generally was affected by it?—No.

4848. (*Mr. Russell Gurney*). In practice have you often found that they have altered the sentence, turning an acquittal into a conviction?—It does sometimes happen.

4849. Do you think that that has a good effect?—It shows that the revising officer reads over the proceedings very carefully.

4850. (*Chairman.*) From your experience, should you say that the revision is oftener in consequence of the sentence or of the finding?—I should say in consequence of the finding.

4851. (*Mr. Whitbread.*) In the case to which you have just referred, about the tearing of this shell jacket, I presume that the reason which the officers gave for having acquitted the prisoner was that they did not believe the evidence of the witness?—They gave no reason, and I could not have asked them for any.

4852. If the reason for the verdict of acquittal was the disbelief which the court entertained of the evidence of this one witness, are you not of opinion that those officers who sit and hear the evidence are better judges of whether the evidence is given in a straightforward and truthful manner than the revising officer, who merely sees the full report of it?—No doubt as a general rule that is so; but there could have been no mistake about this matter, it was so clear.

4853. (*Lt.-Gen. Peel.*) Am I right in concluding from the evidence which you have given, that your opinion is that courts-martial as at present constituted are more courts of honour than legal courts by which justice is generally substantially administered, and which are, if anything, in favour of the prisoner; but that you are opposed to the introduction of lawyers into those courts, with this exception, that if lawyers are employed on the part of the prisoner the prosecutor should also have the assistance of them?—That is exactly my opinion.

4854. (*Chairman.*) Have you any other suggestions to make to the Commission?—I should not be sorry to see regimental courts-martial done away with altogether.

4855. What leads you to that conclusion?—I should like to see a much more extended power put into the hands of commanding officers of regiments to enable them to inflict punishments which would be almost tantamount to those inflicted by the sentence of a regimental court-martial, with a power of appeal on the part of the soldier to the general officer commanding on the spot at any time.

4856. What is the defect of the present system which has led you to that conclusion?—The advantage would be that it would strengthen a commanding officer's position and his usefulness very much to give him a more extended power of awarding punishment.

4857. Is it that, rather than the defect of the system, which makes you believe that it is advisable to do away with regimental courts-martial?—The defect of the system is, I should say, the necessity of recording a court-martial against a man for an offence the punishment of which, I think, might safely be intrusted to his commanding officer.

4858. (*Lt.-Gen. Scarlett.*) What advantage do you think is derived from regimental courts-martial?—I suppose that at present they are intended to assist the commanding officer rather than otherwise.

4859. (*Chairman.*) But what check would you suggest on a commanding officer who might from temperament or from other causes be an injudicious officer?—The check which the general officer, who has always an opportunity of examining into the mode in which the commanding officer is administering punishments, has over him.

4860. But it is only occasionally that he has that opportunity, is it not?—I do not see why he should not exercise it at all times.

4861. (*Lt.-Gen. Peel.*) Did you not suggest that the men should have the power to appeal?—Always, and at once.

4862. (*Chairman.*) You would give the power of appeal to the soldier; would you give him a power of appeal to a regimental, district, or a general court-martial?—I should like to see the regimental court-martial, as I said before, done away with, in which case he would have an appeal to a district court-martial if he chose it.

4863. Supposing that a crime is of very frequent occurrence in a regiment, is it always possible to get a district court-martial?—I should imagine the cases must be very rare in which you could not get one.

4864. Of course under that system it is probable that district courts-martial would be very much more numerous than they are now?—I think not; I think the appeals would be very rare.

4865. But supposing that it was otherwise, would it not subject the officers of other regiments and the service generally to great inconvenience if these courts were held continuously?—Of course if the appeals were very frequent it would.

4866. (*Capt. Vivian.*) Practically, do you think that a soldier would take advantage of, or would venture upon an appeal against his commanding officer?—I think very rarely indeed.

4867. So that in fact it would not be much of a boon to a soldier to have the advantage of appeal if he did not dare to use it?—Not much. I do not say that he would not dare to use it; but I think he very seldom would use it. I think the punishments awarded by commanding officers are generally so just that a man would very seldom think that he had reason to appeal.

4868. (*Chairman.*) But is it not the case that a punishment is not always awarded by the commanding officer, but sometimes by the commanding officer for the time being, who may not be the colonel or even the major?—That may be so. The punishment must alwas be awarded by the commanding officer of the regiment for the time being, excepting in the case of very minor punishments, which the captain of a company is permitted to award.

4869. Does it never happen that a captain is in command of a regiment?—Yes.

4870. Would he not then be in the place of colonel as regards the punishment of offenders in the regiment?—Certainly; but I think the experience of a captain who found himself in command of a regiment would be quite sufficient to enable him to award punishments properly.

4871. You do not then apprehend that any inconvenience would arise?—None whatever.

4872. (*Viscount Eversley.*) Would it not be necessary to have some scale of punishments in that case?—I think it would be advisable. Where that scale exists it works very well indeed.

4873. (*Chairman.*) Where does it exist?—It used to exist in the Guards, but I do not know whether it does now.

4874. (*Lt.-Gen. Peel.*) In several regiments a man may know what punishment he has incurred by the crime he has committed, may he not?—I fancy so.

4875. (*Chairman.*) With regard to the punishment of non-commissioned officers, evidence has been given here that it is desirable to alter the present practice of invariably reducing a non-commissioned officer to the ranks before he can be punished; would you suggest any alteration in that practice, and if so, what alteration?—I should certainly suggest that non-commissioned officers should be subject to punishments for minor breaches of discipline.

4876. What class of punishments should you suggest?—Extra duty, deprivation of pay, and confinement to barracks; but I should take care that those punishments were administered in such a manner as not to lower the non-commissioned officer in the eyes of the rank and file.

4877. Could you sentence a man to confinement to barracks without its being known to the soldiers and

rather lowering him in their eyes?—It might be done in this way, that if a non-commissioned officer were incurring the punishment of extra duty it should always, as a matter of course, carry with it confinement to barracks so long as it lasted.

4878. (*Capt. Vivian.*) But the fact of a commissioned officer being put under arrest does not lower him in the eyes of the men, does it?—Not that I am aware of.

4879. Then why should it have that effect in the case of a non-commissioned officer?—I do not think it would lower him, but I was meeting the objection which the chairman appeared to make.

4880. (*Lt.-Gen. Scarlett.*) Would you have him do his duty while under punishment?—Yes, I would make him do all his duties.

4881. Would you make a non-commissioned officer under arrest or confinement to barracks do his duty?—Not while under arrest, but all the while he was under punishment, such as extra guards.

4882. Supposing he was confined to barracks, would you make him do his duty?—I should consider as a matter of course that he would be confined to barracks while that punishment lasted.

4883. (*Chairman.*) Is there any other punishment that you would suggest with regard to non-commissioned officers? Do you think that the power of reducing them from the rank of serjeant to the rank of corporal, for instance, and not to the rank of private soldier, would be judicious punishment?—In certain cases I do not see any objection to it. I do not know whether it is relevant to this inquiry, but I should like to see the pay of corporals so increased as to enable them to mess with the serjeants.

4884. (*Lt.-Gen. Eyre.*) Do you mean that you would wish to assimilate the system to that which prevails in the Royal Engineers?—Yes. If I remember rightly they have five or six classes of pay.

4885. But that would cause a greatly increased expense, would it not?—No doubt.

4886. (*Chairman.*) With regard to the punishment generally of private soldiers, can you suggest any punishment to take the place of corporal punishment, which has just been abolished by Parliament?—The only punishment which suggests itself to me now is that a district court-martial should have the power of marking a soldier with the letters "B. C." where they do not possess it now. At present a district court-martial has that power only in case of a soldier being tried for disgraceful conduct, but as you have taken away the power of corporal punishment I think it is most advisable that you should have the means of getting rid of a bad character. Very often bad characters are obliged to be retained in a regiment, because they are not marked in such a way as will prevent their immediate re-enlistment if they are discharged.

4887. What punishment, in your opinion, does a soldier dread the most after corporal punishment?—That which deprives him of his pay.

4888. He dislikes that the most, but does he dread it the most?—I think he dreads it the most.

4889. More than solitary confinement and bread and water?—One carries the other with it certainly; he is deprived of his pay so long as he is in prison.

4890. But it is not your opinion, is it, that the soldier would dread the stoppage of his pay so much as solitary confinement with baead and water?—No; I presume that the next most severe punishment is solitary confinement.

4891. Do you think that is more dreaded than hard labour?—I think it is by some, but not by others; it depends very much upon the disposition of the man.

4892. (*Mr. Russell Gurney.*) Do you think that it is dreaded by any of the men until they have endured it?—My experience is only so far practical, that I have talked the matter over with old non-commissioned officers, and with them I have found a very great deal of difference of opinion; they all say that it depends very much upon the character of the men.

4893. (*Viscount Eversley.*) Have they the means of giving solitary confinement in all military prisons?—I cannot speak very accurately upon that point, not being a visitor of any military prison.

4894. (*Chairman.*) Have you ever found any difficulty, in your experience, in carrying out military punishments with sufficient severity?—I do not think that soldiers are punished half severely enough in many prisons; I think that if the prison were made a place of severer punishment to a soldier than it is, in many instances it would have a very good effect in deterring him from crime.

4895. Have you been in India?—Yes.

4896. Do you coincide with evidence which we have already had, that there will be a very great difficulty in maintaining the discipline of the army now, owing to the want of a proper mode of carrying out the punishment which may be inflicted by a court-martial?—I think so; so far as my opinion goes, I am extremely sorry that corporal punishment has been done away with.

4897. In England you state your experience does not lead you to form an opinion upon that point?—No, not in England.

4898. As to the punishment for drunkenness, are you of opinion that it might be altered with advantage?—Yes; I think that it should not be made obligatory to try a soldier for the fourth act of drunkenness for habitual drunkenness.

4899. Would you place any limit to the number of times?—That is a difficult question to answer, because it is so capable of being abused by some commanding officers of regiments. Those who want to show a small court-martial list will very often perhaps allow a man to be drunk oftener than is right, without bringing him to a court-martial.

4900. That was really the cause of the present rule, was it not?—I fancy that it must have been so; but at present the old soldier who has his wits about him will take care not to be drunk in the vicinity of his camp the fourth time, but he will go to a distance from his camp to get drunk, and then he is punished for absence without leave only. I believe that constantly occurs.

4901. Do you believe that it would be an advantage if, instead of the present system, a system of fines were adopted?—I think that it would operate very well, particularly now that the soldier has plenty of money.

4902. Do you think that it would check drunkenness?—I am not sure that it would check it, excepting as depriving the soldier of part of the means of getting drunk.

4903. But you would recommend it?—I certainly would recommend it.

4904. Is there any other system of punishment which you would recommend than those which at present exist?—I am hardly prepared to recommend any other system. I think that we make a soldier's drill distasteful by giving him too much of it. We have hardly any other punishment for minor offences than drill. I should be glad, therefore, on that account, to see pecuniary fines imposed instead of so much drill.

4905. Have you any suggestions to make with regard to the laws of courts-martial, that is to say, the Mutiny Act and the Queen's Regulations, and the custom of the army, upon which the conclusions of courts-martial are founded?—I think that they might be very much simplified, and made more intelligible in a great many cases. I should venture to say that there is more legal phraseology at present than there is any necessity for.

4906. Would you have, for instance, more of the Queen's Regulations embodied in the Articles of War?—Yes.

4907. And would you have a scale of punishments attached to them?—Yes, I think that would be a very good thing; it would render the punishments uniform,

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which is very desirable; for sometimes in the same cantonment or in the same garrison very different scales of punishments are in use in various corps.

4908. But you would not rigidly limit the punishments to each crime, I presume?—No, a great deal must be necessarily left to the discretion of the commanding officer.

4909. Merely putting a limit beyond which and beneath which and beneath which they could not give a sentence?—I should rather say beyond which they could not give a sentence.

4910. (*Lt.-Gen. Eyre.*) For an act of insubordination with violence, say, on parade, what immediate action would you recommend to be taken as a preliminary measure till the man could be dealt with finally?—I see nothing else but to send him to the guard room.

4911. (*Captain Vivian*). Would you him put in irons?—Certainly, if he was violent after confinement.

4912. (*Lt.-Gen. Eyre.*) For the first 24 hours would you consider some decisive action necessary?—I should shut him up by himself.

4913. Such a thing as you are aware might have been formerly tried on the spot by court-martial, and the man might have been flogged?—I think it is a great pity that that does not prevail now.

4914. But that being out of the question, to meet that emergency might not the suggestion which I have made be adopted?—You might shut him up certainly, and as he is out of sight of his comrades I do not know that, unless you put him on bread and water, which he could talk about after he came out, you could do much more.

4915. (*Mr. Russell Gurney.*) But would you inflict any punishment upon him before he is tried?—I do not see how you could do that.

4916. Could you do anything except that which was necessary for safe custody?—No.

4917. (*Lt.-Gen. Eyre.*) As regards good-conduct men in the possession of good-conduct badges, is not that possession very often a proof of a very strong head more than of anything else?—Very frequently.

4918. So that in respect to the habitual drunkenness question that is worthy of consideration?—Certainly, you generally see that servants have more good-conduct badges than any one else.

4919. (*Capt. Vivian.*) As flogging is done away with, do you not think that it would be advisable to strengthen the hands of the commanding officer as to the power of getting rid of bad characters?—Certainly.

4920. I believe that you have no power now of getting rid of a bad character unless he is tried by court-martial and dismissed the service?—No; unless he is marked in such a way as to prevent his re-enlisting.

4921. (*Mr. Russell Gurney.*) He cannot be marked without a court-martial can he?—No; when I am speaking of the advisability of restoring corporal punishment, I mean while you enlist a great many men of the class you are obliged to enlist now. I think that the increase of pay is certainly introducing a class of recruits whose *physique* is better, but we have as yet hardly had time to judge of their *morale*.

4922. (*Lt.-Gen. Eyre.*) You are aware that a man who has, say, five good-conduct badges, may be tried for some great crime and be convicted and go to prison for two years, by which he would only forfeit one of those badges, so that he therefore is in prison wearing four good-conduct badges; is it not considered that there is a great anomaly in that position?—Yes, I think that it is a very great anomaly.

4923. In the royal navy a man forfeits in fact the whole number of good-conduct badges by the authority of the captain of the ship, whereas the act of a court-martial in itself simply deprives him of one; do you think that that ought to be so?—I think that the act of a court-martial ought to have power to deprive him of all if necessary.

The witness withdrew.

W. G. G. V. V. Harcourt, Esq.

WILLIAM GEORGE GRANVILLE VENABLES VERNON HARCOURT, Esq., one of Her Majesty's Counsel, recalled, and further examined.

4924. (*Chairman.*) We understand that you wish to offer some explanation of your former evidence?—Yes. I made a statement at the end of my evidence on the subject of the practice of courts-martial in allowing the prisoner to see the preliminary depositions, and if the Commission will allow me I will state the reason why I called attention to that fact. It was because I considered that the court-martial upon Colonel Crawley, from the manner in which it was conducted, was a peculiarly authoritative proceeding, and that it would probably pass into a precedent. It was conducted immediately under the eye of the highest military authorities in England, and I was afraid that unless attention was called to the things which appeared to me to be objectionable they might pass into authority, and that at some future time in some book on courts-martial it would be said that in this court-martial it had been decided that the prisoner could not have the depositions available to him. That was the reason why I thought it desirable to call attention to it. I think I stated on the former occasion that application had been made to the Judge Advocate-General's department for the depositions and that they were refused. I do not think that that statement is substantially incorrect, but certainly in form it does not appear to have been perfectly accurate, and I should like, if the Commission would permit me, to state exactly what did occur. When the charges were made, and when Colonel Crawley was asked whether he pleaded guilty or not guilty, under my advice he submitted certain considerations to the court. He objected that the charges were not sufficiently specific. He was charged generally with cruelty and ill-treatment, and he said, "I am left in "ignorance of the particular acts with which I am "charged, and am much embarrassed in knowing "with what evidence I ought to be prepared to "meet them. In this respect I am advised that the "framing of the first charge differs altogether from "the course pursued in any other tribunal, criminal "or civil. In a criminal proceeding the prisoner is "informed by the indictment and depositions of the "details of the case he is called upon to meet. In a "civil cause the court will always take care that the "defendant shall be supplied with the particulars of "the charge brought against him. It has been laid "down on the highest authority that vagueness "in the charges is as objectionable in proceedings "before military as before civil tribunals. I have "applied to the prosecution to be allowed to inspect "and have copies of the depositions of the witnesses "taken in India, which would have informed me of "the particulars to which the first charge is pointed. "This request has, however, been refused. I beg "leave to read to the court the correspondence "which has passed between me and the authorities "on the subject." Then various letters, which were addressed as I see now, to the Adjutant-General, were read, and one of those letters addressed to the Adjutant-General at the Horse Guards, states, "I am "advised by my solicitor, who has carefully studied "and considered all documents submitted to him, "together with the charges as they are now framed, "with a view to preparing my defence, that the "first charge is too vague in its nature to enable him "satisfactorily to meet it. He informs me that in civil "actions in like cases of supposed injury the judge "would compel the prosecuting party to state in "writing, as nearly as he could, the specific injuries "complained of and the dates when they were com-"mitted; and as he believes there is no different law "or practice prevailing in courts-martial, he thinks

" that upon a proper application the same privilege " will now be granted to me by His Royal Highness." Then after that the next thing which seems to be material is this, the president of the court-martial, on the same day, at the end of the proceedings, said, " You have asked, Colonel Crawley, for the depositions " of witnesses taken in India. I have to state that " no depositions were taken of any kind. There was " no examination of witnesses till the charges were " framed. (*Col. Horsford.*) There were certain " examinations taken before Major Moore, but that " was all. There were no statements made before a " magistrate. (*The President.*) Were they state- " ments touching this court-martial? (*Col. Hors- " ford.*) They were statements taken by order of the " Major-General at Mhow. (*The President.*) Are " they in your possession? (*Col. Horsford.*) They " are; they were simple statements of what evidence " could be procured in order that unnecessary wit- " nesses might not be sent home. Charges had been " made, and it became absolutely necessary to weed " out, as it were, important from unimportant evi- " dence. Sir Hugh Rose, however, when he found " what was going on, gave orders against its con- " tinuance, and directed that every man who was on " guard, or on duty, or knew anything of the case, " should be sent home. (*Col. Crawley.*) I beg pardon; " I think the gallant officer is under a mistake. The " inquiries did not cease when the orders came; on " the contrary, many more witnesses were examined. " (*Col. Horsford.*) I have made the statement ex- " actly as it reached us. The few statements which " were taken were sent home, and we have been " obliged to get up the case to some extent with their " assistance. (*Col. Crawley.*) My only object was to " ascertain whether the statements now being made " by the witnesses are the same as those which they " gave in India." You will see that that is the object, as you, sir, know from your experience in the case of depositions it is very valuable to the prisoner to have an opportunity of comparing the depositions made at a previous stage with the evidence given on the trial, in case they should contradict one another, and of course that is a great assistance to the prisoner. Then the president says, "If you can show hereafter " that the statements are different it will be highly " important. (*Col. Crawley.*) The task would be " much facilitated if I were in possession of the state- " ments taken in India." Then, on the next day, Col. Crawley, addressing the court, said, "Before the " proceedings go further, I would wish respectfully to " ask the court for their decision upon my application " made yesterday, that I should be furnished with a " copy of the examinations of witnesses taken by " the prosecution in India. (*The President.*) The " answer has been already given, that no deposi- " tions were taken; they were merely some prelimi- " nary examinations of witnesses, not even before a " court of inquiry. (*Col. Crawley.*) I do not call " them depositions, but statements taken in India " for the prosecution before the Judge Advocate " at Mhow. (*The President.*). No. There was " nothing that constitutes evidence taken, and there- " fore they cannot be produced. (*Col. Crawley*). " May not an inquiry be made from the prosecution " as to the nature of the statements taken in India " by order, as I believe, of Sir Hugh Rose." Then Colonel Horsford makes this statement, and this, I think, is the important part of the thing. " Colonel " Horsford said, the prosecution wished to give an " answer in writing to the request, and handed in " the following reply: 'No examinations were taken " 'on behalf of the prosecution in India. It is be- " 'lieved that the answer given in this matter " 'yesterday was correct, namely, that with a view " 'of ascertaining what witnesses ought to be sent " 'from India to England, as well for the prosecution " 'as for the defence, the military authorities in " 'Bombay examined several soldiers about their " 'knowledge of what they thought to be the ma- " 'terial facts of the case. How those examinations " 'were conducted, in the presence of whom, or " 'whether correctly reported, the prosecution have " 'no knowledge; and as they cannot make use of " 'them before this court on behalf of the Crown, it " 'is submitted to this court that the prisoner cannot " 'legally do so either. After a certain number of " 'these examinations had been taken, Sir H. Rose " 'issued an order that all persons whose evidence " 'could by any possibility be needed should be sent " 'over to England, and then no more examinations, " 'as far as is known to the prosecution, were taken.' " (*The President.*) And even if they had been they " would not have been admissible. (*To the official " prosecutor.*) Is it known to you whether those " examinations were taken on oath." That I think is an accurate account of the proceedings.

W. G. G. V. V. Harcourt, Esq.
15 June 1868.

4925. Is your immediate object in appearing before the Commission to-day to correct the impression which you thought might have been produced by your former evidence?—I desired to give more accurately what I had stated before, which I thought might have been susceptible of misapprehension.

The witness withdrew.

Adjourned.

Room E. House of Lords.

Friday, 17th July 1868.

PRESENT:

LIEUTENANT-GENERAL PEEL IN THE CHAIR.

MARQUIS OF HARTINGTON.
VISCOUNT EVERSLEY.
THE RIGHT HON. J. R. MOWBRAY.
THE RIGHT HON. RUSSELL GURNEY.
SAMUEL WHITBREAD, Esq.
CAPTAIN VIVIAN.
JOHN LLOYD WHARTON, Esq., *Secretary.*

ALFRED RADCLIFFE, Esq., examined.

A. Radcliffe, Esq.
17 July 1868.

4926. (*Chairman.*) What is your position in the War Department?—I am at present in charge of the prison branch, in the absence of Mr. Dunbar, who is away on sick leave.

4927. Has the proposition that it would be advantageous that the military prisons should be placed directly under the superintendence of the board of directors of government prisons been communicated to the War Department, and has their opinion been asked upon it?—It was not communicated to the War Department until yesterday afternoon, when Colonel Wilson Patten called upon Lord Longford to ask him his opinion; that was the first which we had heard of the proposition.

4928. (*Mr. Whitbread.*) Who is in charge of the prisons at the War Department?—Mr. Dunbar.

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4929. To what extent is he in charge of them, does he visit them?—No; they are visited by the Inspector General, Colonel Henderson, and by the Inspector, Captain Du Cane.

4930. Both of those persons being members of the board of directors of the convict prisons?—Yes; and they are there to advise the Secretary of State upon matters of discipline, and upon the construction of prisons, and questions of that kind.

4931. Has either of those officers the power of giving an order in a prison when he visits it?—Not in the least; he can make his recommendation.

4932. He can only carry out his views in the way of making a recommendation to the Secretary of State for War?—Yes.

4933. Is Mr. Dunbar in any way conversant with the internal arrangements and management of those prisons?—I think that he is.

4934. Do you think that he has ever visited them?—Not exactly in an official way, but still I know that he has been to Southwark, and that he has sent down to Gosport, and that he has visited those prisons in a sort of semi-official way; he has visited one prison, and he has caused another to be visited by his subordinates.

4935. How long have you been connected with this branch?—About eight years.

4936. In that time do you remember that any one from that branch has visited Fort Clarence prison?—I remember that Fort Clarence prison has been visited once.

4937. By Mr. Dunbar?—No; but by a subordinate.

4938. Do you remember a visit having been paid to Shorncliffe?—No; that is quite a recent prison.

4939. Has Aldershot been visited?—Yes; by a subordinate, but not by Mr. Dunbar himself.

4940. Then you can remember one visit to Aldershot?—Yes.

4941. Can you remember a visit to Weedon?—No.

4942. Do you remember a visit to Greenlaw?—No.

4943. Do you remember a visit to either of the prisons in Ireland?—No.

4944. There is one prison at Devonport?—Yes.

4945. Do you remember that ever having been visited?—I do not.

4946. (*Marquis of Hartington.*) That forms no part of the duty of Mr. Dunbar, or of his subordinates?—Not in the least; but it is the duty of the Inspector of Prisons and his subordinates.

4947. (*Mr. Whitbread.*) Who draws out the regulations for the government of the military prisons?—They are drawn out by Mr. Dunbar at his branch; in fact a revision of the prison regulations is now being prepared.

4948. Under what authority are those regulations issued?—Under the authority of the Secretary of State for War. It is under the powers which are given to the Secretary of State by the 29th clause of the Mutiny Act.

4949. And a revision of these prison regulations is now being made in the department which is under the charge of Mr. Dunbar?—Yes.

4950. (*Chairman.*) Through whom do they pass to the Secretary of State for War?—They would be submitted to Colonel Henderson for his revision, and they would then be passed back again to our branch, and they would go to the Secretary of State.

4951. They would be passed through one of the under secretaries?—Yes.

4952. Which of the under secretaries?—Sir Edward Lugard.

4953. That is to say, that they would be passed through the individual under secretary, with his remarks upon that proposal?—Quite so.

4954. (*Mr. Whitbread.*) These rules, having been made, whose duty is it to see that they are carried out and acted upon?—It is the duty of the visitors of prisons.

4955. Are they a permanent body?—No.

4956. Are they a very temporary body?—Sometimes; because nobody lower than a field officer can be a visitor, and therefore they are liable to be constantly changed.

4957. And you do not require a man to have any previous knowledge or experience in prison discipline?—No, it is not actually required; but as a matter of fact they are visitors in almost every station; they must be field officers of a good deal of experience, because they are visitors in almost every station to which they are sent.

4958. (*Capt. Vivian.*) Is every field officer in a garrison town a visitor?—No; they try to lessen the duties as much as possible, and in the large garrison towns they have a very considerable proportion of visitors, but I am not prepared to say what proportion.

4959. (*Mr. Whitbread.*) How are the visitors appointed?—By the Secretary of State, on the nomination of the general officer commanding.

4960. How many of them are there?—It depends upon the size of the prison and of the garrison. I do not think that there is any particular rule as to the number.

4961. Is it not the number two or three?—They try to increase the number, so as to lessen the labour of visiting. In a large garrison they have a large number of visitors.

4962. Do those visitors make any report to the Secretary of State for War?—Yes; they make quarterly reports, which are reports upon the state of discipline.

4963. (*Marquis of Hartington.*) How often do they visit the prisons?—Once a week.

4964. (*Mr. Whitbread.*) One of them visits once a week?—Yes.

4965. (*Chairman.*) Are there not certain punishments in these military prisons which can only be inflicted upon the order of the visiting officer?—Yes; for instance, corporal punishment.

4966. How many visiting officers are required for that purpose?—One only for certain prison offences.

4967. You say that it is the duty of the visiting officers to see that the instructions of the War Department are carried out. Of course it is the duty of the governor of the prison to see that they are carried out?—Yes.

4968. (*Capt. Vivian.*) Does Colonel Henderson report to the War Office upon the state of the military prisons?—Yes; an annual report is presented to the House of Commons once a year.

4969 (*Chairman.*) Does he visit every prison once a year?—I think not.

4970. (*Mr. Whitbread.*) Does not a person from his department do so?—I believe not. I believe that there are some military prisons which have not been visited for a great number of years.

4971. (*Marquis of Hartington.*) No executive functions with regard to the discipline or management of the military prisons are exercised by any one except the Secretary of State for War; neither the Inspector General nor the visitors have any power to take any action of their own authority with regard to the discipline or management of military prisons?—They are not authorized to exceed the powers given to them by the prison regulation. They may do anything within the limit of the regulations.

4972. Would either Colonel Henderson or the visitors have the power to reprimand in any way the governor of the prison?—No, not without the approval of the Secretary of State.

4973. Would any of them have power to order the governor of a military prison to alter this or that detail of the system?—Not without the authority of the Secretary of State.

4974. In fact, their functions are entirely confined to reporting?—Entirely; they are simply to advise the Secretary of State.

4975. (*Chairman.*) Supposing that the governor of the prison does not carry out the system laid down

for him by the Secretary of State, would the visiting officer have the power to order him to do so?—No; he would report through the general officer commanding to the Secretary of State, and nothing could be done until the decision of the Secretary of State was given upon the matter.

4976. (*Capt. Vivian.*) I presume that all these reports would be sent to the general officer commanding?—Yes. The prisons are looked upon as purely civil establishments, and the reports do not at all go through the Horse Guards, but go to the Secretary of State at once.

4977. (*Mr. Whitbread.*) There seems to be an objection to transfer the direction of these prisons to the Board of Directors of Convict Prisons, on the ground that the military prisons would cease to be prisons in which soldiers could be properly kept who had been retained in service. What are your grounds for that objection?—Military prisons are not convict prisons at all, but they are on the same principle as the common gaols of the country, the only difference being that their visitors are military men, and that in the other case the visitors are justices of the peace for the counties and boroughs. The common gaols of the country have not been placed under the jurisdiction of the Director of Convict Prisons, except that he is to give advice as to the building of them. All the discipline in common prisons is laid down in the Schedule to the Act of 1855, just in the same way as for military prisons; it is laid down in the regulations.

4978. In what way does the life of a prisoner in Pentonville pass under the direction of Colonel Henderson's board differently from that of a prisoner in a civil goal, regulated under the Prison Discipline Act of 1865; can you point out a single instance in which the discipline of the separate confinement in convict prisons at Pentonville and Millbank differs from that of any modern civil prison in the country?—I can hardly say that from my own experience; but I think that the prisoners in the common prisons of the country would not be set to make roads or digging stones out of quarries, whereas the convicts in the convict prisons such as at Portland would.

4979. But I confine my remarks to those prisons where the convicts pass the first nine months of their confinement; and as far as I know they are exactly the same as prisoners in common gaols?—I think that that is so.

4980. Do you know that there is one single point of difference between the prisons of Pentonville and Millbank and in a common gaol, say Wandsworth?—None whatever in the first nine months.

4981. They you do not see any objection to military prisons being carried on upon the principle of separate confinement prisons, as in Millbank and Pentonville?—Not the least, excepting that in Pentonville and Millbank there is no drill coming on.

4982. What is the principal punishment in the military prisons?—Shot drill.

4983. Is that considered a punishment which tends to keep the men well set up, and looking like soldiers?—I am afraid not.

4984. Is it not about the very worst kind of hard labour which is known for that purpose?—I should think that it was.

4985. Has it not been very much condemned on that very ground, namely, that it tends to make a man stooping and round shouldered, and to take out of him all soldierly appearance?—I have heard that remarked, but I have never seen any official report upon the subject.

4986. (*Marquis of Hartington.*) Colonel Henderson has never condemned it?—No.

4987. (*Capt. Vivian.*) But is not the very nature of the punishment necessarily found to make a man very round shouldered?—Yes, I think so, unless he has the correction of a little drill afterwards.

4988. (*Mr. Whitbread.*) Do you object to the use of soldiers in making roads, or other public works outside the prison?—Not entirely, because at Aldershot we have had to use them in that manner for a great number of roads there.

4989. Is there any difference in the employment of the soldiers outside the prison at Aldershot, and of the convicts who are employed?—I think that the labour is considerably severe to the soldiers. I do not think that anything like the same amount of work is required of them.

4990. Is it your object to take the labour out of a soldier in the prison?—I want to keep up the soldier's stamina, so that he may go back to the regiment in as good a state of health as when he entered the prison.

4991. Is it with that view that the dietary in military prisons is very much less than in civil prisons?—I think that that is the great error of the system.

4992. The truth is that the dietary in military prisons has been adapted to a task of very light labour?—Yes, there is altogether a separate and superior diet for what are called hard-labour prisoners.

4993. There is no other hard labour inside the military prisons except shot drill, is there?—No.

4994. (*Marquis of Hartington.*) The objection to the proposal appears to be chiefly on the principle that soldiers in confinement ought to remain under military superintendence?—Quite so.

4995. Can you point out any way in which practical inconvenience would ensue if the change which is recommended were to be made. Of course the expenditure of the vote for the administration of martial law is to a certain extent under the superintendence of your branch?—Almost entirely.

4996. Practical inconvenience would, no doubt, ensue if you gave such powers to the Board of Directors of Convict Prisons as would enable them to expend that vote without the sanction of the Secretary of State?—Certainly.

4997. Subject to that limitation, do you see any inconvenience?—I think that it would upset the whole principle upon which military prisons have been founded, that is to say, that they are to be perfectly similar in their system to the common gaols of the country; but as I understand the proposition, it is to put the military prisons under the Surveyor-General, whereas at present the Surveyor-General has no control at all over the common prisons of the country.

4998. (*Mr. Whitbread.*) If the regulations were still drawn up under the authority of the Secretary of State, and if an officer was appointed by the Secretary of State as a member of the Board of Directors of Convict Prisons, in your opinion would there be any objection to placing the administration of military prisons under that board?—I think so, if you put them exclusively under that board and entirely removed them from the authority and the jurisdiction of the Secretary of State for War.

4999. The authority of the regulations under which they would be governed would still be that of the Secretary of State's office, would it not?—But there are constantly questions arising as to the interpretation of the regulations, which, I think, should be left to the officer under whose sanction they were drawn up originally.

5000. (*Marquis of Hartington.*) What is the staff of Mr. Dunbar's branch?—He has eight men under him.

5001. Is the business of the branch exclusively confined to prisons?—No; we have a very large amount of business; we have the preparation of the Mutiny Act and partly the transport of troops; at least we have to settle any financial question with regard to the transport of troops.

5002. Can you state how much of the time of the branch is occupied in the business of a military prison?—I should say that the time of two men out of the eight is exclusively employed upon that subject; of course other men are mixed up in the matter, but still two men exclusively employed upon it might do it.

5003. (*Capt. Vivian.*) How is the time of two men employed in the business of the military prisons; what is the character of the cases which come before them?—There are complaints of warders with regard to

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their pay, and complaints of visitors and reports of visitors with respect to different infractions of prison discipline and as to the rules not being carried out; and there are complaints of warders with regard to each other, and sometimes with regard to each others wives; and there are a variety of things which have to be settled; in fact all matters as to the interior economy of the prison.

5004. (*Marquis of Hartington.*) Whose busines is it to look over the reports of the visitors?—There has first to be a report to the Inspector General for his opinion; and then, when his opinion is given, it is generally speaking submitted by our branch, without any remark, to the Under Secretary of State.

5005. Is that an ordinary report?—Yes.

5006. (*Mr. Whitbread.*) It is a quarterly report?—It is.

5007. (*Marquis of Hartington.*) Supposing that no particular action is recommended, is it still the duty of some person to look over these reports?—Certainly; sometimes it is merely for the Inspector General or the Secretary of State to see the report, and there is merely put "see" upon it. It is our duty to call attention to anything which requires consideration.

5008. (*Mr. Whitbread.*) Taking an average report in one quarter, it comes to the War Office, and from you it goes to the Inspector General's office, and then comes back again to the War Office, and is submitted to the Secretary of State?—Yes.

5009. Supposing that anything was recommended by the visitor to be done, how long would it be before any action on that recommendation would reach the prison, as a rule?—It depends upon the nature of the recommendation in the visitor's report; there is scarcely anything but building new quarters, or new cells, and matters not requiring immediate action. If there was anything requiring immediate action, the visitors would make a special report upon it, and would not put it in their quarterly report.

5010. (*Marquis of Hartington.*) Does it often happen that questions connected with the administration of the military prisons are referred to the Horse Guards?—Very often.

5011. (*Charman.*) How often do the governors of prisons report?—Only annually.

5012. Suppose that anything occurred in one of these prisons?—The governor would then make a special report to the Secretary of State. The governors of those prisons are entitled to report directly to the Secretary of State without going through the General at the station; they are immediately under the Secretary of State; they are, in fact, looked upon as civillans.

5013. (*Capt. Vivian.*) Who manages the question of punishments?—The visitors and the Inspector General together manage it. The Inspector General may advise the Secretary of State on questions of discipline. The visitors would make a recommendation, and the Inspector General would offer his opinion upon it.

5014. (*Chairman.*) You say that some provision is about to take place in the rules regarding these military prisons?—Yes.

5015. By whom are those rules being drawn up?—They are being drawn up by our branch, and they are simply founded upon the experience of last year, before the last revision took place.

5016. They are submitted to the Inspector General?—Certainly.

5017. (*Marquis of Hartington.*) Are they initiated by him?—Some are.

5018. (*Mr. Whitbread.*) Have any of the regulations which have been issued in the last two or three years in the large civil prisons been taken by you as your guide?—Yes; we have a report by Colonel Henderson, upon which we are acting in a great measure.

5019. What report is that?—It is a report which he made, but I cannot give you the date of it. We simply asked him to give as a copy of these regulations to guide us in revising our prison regulations, and we have been partly guided by that, and partly by the Prisons Act of 1855.

5020. What is the date of your last revision?—I think 1863.

5021. So late as that?—Yes.

5022. Have you any scale as respects appointing the number of warders to prisoners?—Yes; it is one warder to every 12 prisoners.

5023. What is the complement of the prisoners at Fort Clarence Prison?—I think that it is 70 at present; it has lately been considerably reduced. I may be wrong in my figures, because I did not come prepared for that question.

5024. As respects the number of warders at Fort Clarence Prison, where the complement is 106 prisoners, the proportion which you state would be nine warders?—Yes. We generally make about two over to allow for night duty.

5025. Are there not 16 or 17 warders there?—I think not, but I will not say positively.

5026. (*Chairman.*) Do you know the number of prisoners which the prison at Southwark can now hold?—I think that it is about 110, but of course I am only speaking from memory.

5027. (*Mr. Whitbread.*) Your great objection at the War Office in your branch, as I understand it, is that you think that if the military prisons were placed under the immediate superintendence of the Directors of Convicts, the prisons would lose their military character?—That is our idea.

5028. Although the only two professional inspectors are the two members of that board?—Certainly.

5029. To whom you look for advice upon every point as to construction?—Chiefly construction.

5030. And discipline?—Yes.

5031. Is there anything in the report of Lord Cathcart's Committee of 1847 to which you wish to draw our attention?—Yes. On page 15 it is stated that, "the 28th" (but now the 29th) "clause of the "Mutiny Act gives all the necessary powers to the "Secretary at War for the establishment of military "prisons, and also enables him to appoint visitors, "with powers co-extensive with those of visiting jus- "tices at the civil gaols; also to appoint and remove "governors and all other officers; to make, alter, and "repeal rules and regulations; and generally to exer- "cise with respect to military prisons all the powers "which now are or hereafter may be vested in any of "Her Majesty's principal Secretaries of State with "respect to county gaols or houses of correction." Will you allow me to say one word upon a matter to which Sir Edward Lugard wished me call your attention, and that is, that the Director of Convict Prisons has only authority over common gaols, so far as the construction of the prison is concerned, and Sir Edward Lugard does not wish him to have any greater authority over military gaols than he has over the common gaols of the country; because the principle has always been that the common gaols of the country and the military prisons are to be on the same footing, and to be governed by the same principles.

The witness withdrew.

Adjourned.

Friday, 16th April 1869.

PRESENT:

THE RIGHT HONOURABLE COLONEL WILSON PATTEN, M.P., IN THE CHAIR.

THE RIGHT HONOURABLE THE MARQUIS OF HARTINGTON, M.P.
VISCOUNT EVERSLEY.
THE RIGHT HON. LIEUTENANT-GENERAL PEEL.
THE RIGHT HON. J. R. MOWBRAY, M.P.
THE RIGHT HON. RUSSELL GURNEY, M.P.
LIEUTENANT-GENERAL EYRE.
SAMUEL WHITBREAD, Esq., M.P.

CAPTAIN H. M. HOZIER, 2nd Life Guards, examined.

Capt. H. M. Hozier.
16 April 1869.

5032. (*Chairman.*) What public department have you filled in the army?—I have been in the Artillery, I have been at the Staff College, and I am now employed in the Topographical Department of the War Office upon the Staff.

5033. Of what standing are you in the service?—I am a captain of 12 years' service, and I was a cadet before getting my commission at all.

5034. (*Mr. Russell Gurney.*) Has your attention been directed to the means by which young officers could be qualified for sitting upon courts-martial, I am speaking now rather of the regimental courts-martial?—I think that every young officer before getting his commission ought to be obliged to know military law.

5035. You think that it ought to form a part of his examination?—Certainly.

5036. Do you think that there is a want of that sort?—Yes, military law is not at all included in the examination for commissions.

5037. A plan is adopted with reference to the Civil Service in India that candidates should be obliged to attend courts of justice, and to make a report of various trials which they have heard. Do you think that that would be a good plan with respect to courts-martial as giving a general acquaintance with the mode in which such inquiries should be conducted?—Yes, I think that it would be a very good plan.

5038. Does anything else occur to you with reference to that matter?—No, I think that if an officer had to write reports of cases which he had attended, or rather a cadet before he got his commission as an officer, every officer would then be competent to sit upon a regimental court-martial.

5039. Have you formed any opinion as to the possibility of giving the power to the convening officer to resummon a court-martial with a view to a revisal of the finding or of the sentence?—In my opinion no revision ought to be allowed.

5040. Do you think that that would give an increased sense of responsibility to the officers who had to decide?—Yes.

5041. Do you think that the system of revisal is open to any objection in creating an ill feeling between the convening officer and the other officers?—Yes, because if the convening officer does not approve of the sentence or judgment, and sends it back for revision, and if the court adhere to their former opinion, it is almost regarded in the army as a contumacious act on the part of the officers of the court.

5042. Have you known cases in which there has been any undue influence used by the convening officer of a court-martial?—I have myself been on courts-martial where the sentence has been sent back, and the president has thought that we ought to defer to the opinion of the convening officer; and I have heard of well authenticated cases where odium or punishment has been inflicted upon members of courts-martial in consequence of not altering their sentence.

5043. Do you think that any change is necessary with respect to the punishment of non-commissioned officers where they are found guilty of some trifling offence?—Yes, I think that courts-martial ought not to be compelled to reduce to the ranks every non-commissioned officer who is found guilty.

5044. Do you think that it would be a desirable thing to have the power of inflicting a fine?—Yes, or to put a man down a certain number of steps in his promotion, or to reduce him to a junior rank as a non-commissioned officer.

5045. Have you known cases of great injustice to arise from the necessity of reducing to the ranks a man who has been found guilty of the offence with which he has been charged?—Yes, a case occurred in which I was very much interested. A man who was an excellent serjeant was promoted to be quarter-master serjeant; he got absent, partly accidentally I believe, and the commanding officer thought it best to bring him to a court-martial; the court were most unwillingly obliged to reduce him to the ranks; they could not inflict a minor punishment, although he had been one of the best serjeants that I ever knew; he was a broken man ever afterwards.

5046. Do you think that that is a singular case or that those cases are likely to occur?—I believe that those cases frequently occur.

5047. (*Chairman.*) You say that you have known instances in which the court have been considered contumacious, where they have not revised their proceedings in accordance with the recommendation of the convening officer?—Yes, the general feeling in the army is that the court is regarded as contumacious.

5048. Is it not a very frequent occurrence that the courts do not revise their proceedings in obedience to the suggestion of the convening officer?—Not very frequent, I think that a great deal depends upon the moral tone of the president.

5049. Can you give in a list of the instances in which the court have not agreed to revise their sentence?—No, I have seen no statistics at all upon the subject, I am only speaking from my own personal opinion, which of course is limited to the cases in which I have served myself.

5050. You say that you have known instances where odium, and even punishment, has been inflicted upon officers for the course which they have taken in not revising their sentence?—Yes, I have been told of cases, I have known cases in which I myself have been concerned, where the president has expressed his opinion that we ought to defer to the opinion of the convening officer; I have heard of very well authenticated cases in which odium and punishment have been passed upon the officers composing the court-martial.

5051. Can you give such an instance?—There was a case in a regiment quartered at the Tower, where a court-martial was assembled to try a soldier, and they acquitted him; and after that none of the officers who composed that court-martial were allowed to sit on courts, but officers who were on leave were brought back in order to try the men.

5052. In what regiment was that?—In the Fusiliers.

5053. When did it occur?—I do not know when it occurred, but I have been told of it as a very well authenticated case, and I have often heard it quoted in the army; I do not know of it as a fact, but I think that it can be easily ascertained as a fact.

5054. You considered that their punishment was that they were not allowed again to sit upon a court-martial?—Yes, it inflicted odium upon them.

5055. And that is the instance of punishment to which you refer?—I have also heard of other cases, where officers who have sat upon a court-martial have

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been perpetually ordered to sit upon courts-martial for three or four months afterwards.

5056. Was that because they did not revise their sentence?—That was not the reason stated, but it was because their ideas did not coincide with those which were held by the higher authorities.

5057. Can you give instances of it to which we can refer?—I heard that a case once occurred at Woolwich about eight or nine years ago, but I am not quite sure about it. I am speaking now not of my own knowledge. These cases are cases which are commonly talked of amongst officers, and I say what I hear; I was not present, and was not a member of those courts.

5058. Of your own personal knowledge do you know of an instance of the sort?—I was never on a court which has been subjected to punishment.

5059. Do you know of any one instance, of your own knowledge, and not from hearsay, where the officers have been put on repeated courts-martial in consequence of their proceedings in some single court?—No; I have never been on a court which suffered in that way.

5060. Are you aware of your own knowledge of any instance in which that has taken place?—No; I do not know of one, but almost every officer talks of it.

5061. Can you give us such information that we may trace a case?—No, I cannot do that; I dare say that I could find cases.

5062. (*Mr. Russell Gurney.*) Is it a general belief among officers in the army that when they are called upon to revise the sentence, and decline to do so, they will be worse thought of for it?—I think that it is a general belief that an officer who wants to get some little favour had better revise his sentence.

5063. (*Chairman.*) I understand that you cannot give us a clue to any particular case of which you have heard?—No, not at the present moment.

5064. (*Lt.-Gen. Eyre.*) Are you quite sure that these occasions of which you have spoken were not merely occasions on which the convening officer ascertained that there was a good deal of ignorance shown on the part of a young court, and that this order for attendance on courts-martial for a time was not owing to that circumstance, and merely for their instruction and not intended as a punishment?—I cannot be quite certain, but I think that the general impression is that it was a punishment.

5065. (*Chairman.*) Where are you now quartered?—I am on the staff at the War Office.

5066. (*Lt.-Gen. Eyre.*) In your remarks do you allude to all classes of court-martial or to any particular court-martial?—I allude to regimental court-martial.

5067. You allude exclusively to regimental courts-martial?—Yes.

5068. (*Viscount Eversley.*) You object, I think, to courts-martial being reassembled for revision?—Yes.

5069. Would it not prevent that necessity if in district courts-martial the Deputy Judge Advocate attended on every occasion?—I do not know much about district or general courts-martial. I was only speaking of regimental courts-martial.

5070. (*Lt.-Gen. Peel.*) To what regiment have you been attached?—I was in the Artillery, and subsequently in the Life Guards.

5071. (*Mr. Whitbread.*) Who is it that convenes the court in a regimental court-martial?—The commanding officer.

5072. The commanding officer convenes the court because he considers that some soldier has done something which deserves punishment if proved against him?—Yes, or which deserves a more severe punishment than he can inflict.

5073. Who is it who afterwards confirms the proceedings?—The commanding officer.

5074. In your opinion is there not something anomalous in that, namely, that the man who first sets the machinery of trial in motion, should be also the man who is the final judge of the validity of the proceedings?—No, I think that if there was no revision there would be no objection to it, if he had the prerogative of mercy.

5075. But as it stands now the officer who first sets the machinery in motion is the one who is ultimately the judge of the validity of the proceedings?—Yes.

5076. With respect to imprisonment—imprisonment is now very largely had recourse to in the army, is it not?—Yes.

5077. And very many men are very frequently sent to prison, and they come back and serve in the army again?—Yes.

5078. Do you think that it is of any advantage to the service to retain a man in the service who spends a very large portion of his time in prison?—No; in my opinion the best system in the army, if it can be carried out, is the system pursued in the Household Cavalry, where as soon as a man misbehaves himself he is brought up to the commanding officer, and if it is a serious crime he is struck off the regiment; if he deserves punishment he gets it, but he is no longer a soldier.

5079. (*Lt.-Gen. Peel*). How would you prevent that man from enlisting again?—That is a great difficulty, but it is frequently done in the Household Cavalry. I think that when a man is discharged in that way he may be marked.

5080. In the Household Cavalry it is considered to be a punishment to be dismissed from the army?—Yes.

5081. They have higher pay and greater advantages, have they not? you can hardly compare the Household Cavalry with ordinary regiments, can you?—I think that if that experiment were made, and if the power of dismissing men were given to the commanding officer, it would be found to answer.

5082. Did not a man once bring an action against the commanding officer for dismissing him?—He did, but he got cast.

5083. (*Lt.-Gen. Eyre.*) Supposing marking to be done away with, of course that would facilitate men getting into the army again, after having been discharged?—Yes.

5084. How would it do to make a fraudulent enlistment of that sort penal?—I certainly think that it ought to be made penal, and I think that the clauses of the Mutiny Act, which formerly were applicable to persons harbouring deserters and supplying them with necessaries, ought to be strictly enforced. The police never properly look after deserters.

5085. (*Mr. Whitbread.*) Are you aware of the system of recruiting in the navy?—No.

5086. You are not aware that the naval authorities will not take anyone into the navy concerning whom they cannot get a very satisfactory character, and good references?—I think that the characters of the recruits in the army might be inquired into with very great advantage.

5087. Is not that the case now?—Yes, where there is not a very great demand for recruits.

5088. You would be able to inquire into the antecedents of a man?—Yes.

5089. And that would inform you to a certain exient whether the man had been dismissed from the army or not?—Yes, we ought certainly to be able to tell that. I think that a good many men have enlisted in order to get away from their parish.

5090. Do you think that that is a desirable thing?—I think that when a man does not want to be traced the reason is that he is the father of an illegitimate child.

5091. Or perhaps he might be wanted by the policeman for something else?—I think not.

5092. Do you think that it is at all necessary in the interests of the public service to shield a man in that sort of way?—Yes.

5093. Do you think that you could get your recruits without it?—I think that you might do so, but I think that it is very hard not to take a man because he is in that position.

5094. That is to say, in order to evade the civil law?—No, I do not say that, but I think it very hard that because a man happens to be the father of an illegitimate child he is not to be allowed to serve as a soldier.

5095. That service enables him to escape the penalty which the law attaches to him?—Yes, and that I think is quite right. I think that a soldier ought to be shielded as much as possible from the civil law; it is the case in every military community excepting our own.

5096. Has a commanding officer any power to punish a non-commissioned officer short of reducing him to the ranks?—He can stop his promotion.

5097. But he can reduce him in no way short of reducing him to the ranks?—No, the commanding officer cannot reduce him at all without a court-martial. The full colonel of the regiment has power to do so, but it is very seldom exercised.

5098. (*Lt.-Gen. Peel.*) That is to say, that the officer commanding the regiment applies to the colonel?—Yes, I believe that that is done in the Guards; but it is shorter to send a man before a court-martial, and he is reduced by the court-martial.

5099. (*Mr. Whitbread.*) But the court-martial can only reduce him to the ranks?—Yes.

5100. Cannot the commanding officer take away a stripe or pay?—Yes. Practically I have known it to be done in this way, that the commanding officer has said, "You are not fit to be a quartermaster-serjeant, and you had better resign."

5101. So that, in an indirect way, the commanding officer does it?—Yes.

5102. Do you think that it would be desirable to give a court-martial the power of inflicting some punishment short of actual reduction to the ranks?—Certainly.

5103. (*Chairman.*) You have stated that the non-commissioned officers would consider it a punishment if they were put lower in their rank of non-commissioned officers in the regiment?—Yes.

5104. That would not, I believe, subject them to any punishment in the way of promotion, would it? They are not taken in rotation, are they?—They are taken by seniority and selection coupled. I think that as a rule a commanding officer will promote the senior non-commissioned officer if he is equal to the others.

5105. (*Lt.-Gen. Eyre.*) That is to say unless there is somebody much fitter for the duty?—Yes. I have known a good serjeant promoted over a number of senior serjeants to be made a troop serjeant or a serjeant-major; but, *cæteris paribus*, I think that the senior man will always get the appointment.

5106. (*Chairman.*) I believe that you have been a good deal with the Prussian army?—I have.

5107. During the time that you were with that army had you any opportunity of judging of the Prussian system of courts-martial?—Yes. By the Prussian system of courts-martial if a private soldier is tried there are two privates on the court-martial, two corporals, and so on upwards, the captain being the president; but I do not think that it is a good working system.

5108. With regard to the non-commissioned officers, I believe that in the Prussian service they are punished without being reduced to the ranks?—Yes.

5109. What are the punishments?—I think generally by turning them down in their promotion.

5110. Are there any punishments with regard to pay?—I believe not.

5111. With regard to the officers what is the system in Prussia with respect to the education of the officers in military law?—While a man is a cadet he has to pass several examinations before he gets his commission, and in each of them he has I believe to pass in military law. I think that that is the case, but I am not quite certain, because I was chiefly with the army when it was in the field.

5112. Did you ever attend a court-martial in Prussia?—Never; the commanding-officers have large powers in the field.

5113. In the Prussian service have they any book at all similar to what we have in the English service, "Simmons" for instance?—I think that they have their regular regulations.

5114. Have they any text book?—Yes; I think that they have a text book too, but I am not quite sure.

5115. (*Marquis of Hartington.*) Do you know whether the system in the Prussian army of conducting courts-martial is the same as ours? are the questions put in the same way?—I do not know.

5116. You did not study that part of the subject?—No.

5117. (*Lt.-Gen. Peel.*) You were only with the Prussian army in the field?—Yes.

5118. There were very few courts-martial there?—Very few; they punish very severely in the field, without courts-martial at all.

5119. (*Chairman.*) What is the system in the field? the commanding officer punishes, and the punishments are most severe.

5120. What is the most severe punishment?—They tie a man up to the gun wheels, and there are torturing punishments.

5121. Is there any punishment which you have seen in Prussia which you think might be safely substituted in the English army for corporal punishment, as administered formerly?—I think that corporal punishment is the only punishment applicable in the British army, except death.

5122. In time of peace, for insubordination, for instance, is there any Prussian punishment which you would recommend for the English army?—Certainly not.

5123. Can you give an opinion upon any punishment which you think would be a good substitute for corporal punishment which is now abolished?—No, I do not know of any punishment to be substituted for it.

5124. (*Mr. Whitbread.*) Do the Prussians mark their soldiers when they discharge them?—No; but in Prussia the system is totally different from what it is here.

5125. Do you know of any foreign service where a soldier is marked upon being discharged?—No.

5126. Do you think that it is a necessity in this country to do so?—I think that it is a very open question. I think that men discharged with ignominy might be marked.

5127. How comes it that one hears of men being marked over and over again; they have, I suppose, obliterated the first mark?—I do not think that any man ought to be marked twice, unless he has obliterated the first mark. It is perfectly easy to obliterate the first mark; men convert the mark of "D." or "B.C." into "leaves," and all sorts of things, but then the doctor who examines them ought to be up to that.

5128. Marking is not altogether effectual in stopping the re-entry into the army of men who have been discharged?—I think that it is, because the medical officer would be able to detect it.

5129. (*Lt.-Gen. Eyre.*) When you were in the field with the Prussians did you see any case of violent insubordination, and how they dealt with it?—No, I never saw a case of violent insubordination, but they generally punished by tying a man up to a tree, or keeping him standing.

5130. You never saw a man in one of those circular little rooms where he could neither stand nor sit?—No; but I have often heard of that.

5131. Those I suppose are extreme cases?—I think that where in our army a commanding officer would give cells the Prussians give the punishment which you have described. There is a case told (I do not know whether it is correct) in which a man got that punishment for being improperly dressed, in a garrison town.

The witness withdrew.

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5132. (*Chairman.*) Have you any suggestions to make to the Commission with regard to the mode in which courts-martial are now conducted?—I think that there are several points in which the law, as regards courts-martial, might be very materially improved. First, I think that it would be attended with great advantage if there was greater simplicity in the law, which is very complicated and perplexing at present, and very difficult to understand, there being references to so many different documents, Acts of Parliament, Articles of War, Queen's Regulations, and numerous circulars and orders which have been issued bearing upon them. I think that it would tend very much to the simplicity of the law, if all which was actually necessary for the conduct of a court-martial was comprised in the Mutiny Act, the Articles of War, and the Queen's Regulations. There have been great improvements in the last Queen's Regulations in that respect, but they might be carried very much further to simplify matters, and to explain fully the conditions under which officers are required to administer justice as members of courts-martial, according to "The Custom of War." I might give an example or two in illustration; for instance, in the 746th paragraph of the Queen's Regulations, as they stand at present, a definition is given of "disgraceful conduct" which is merely a repetition of the clauses in the Articles of War with reference to it, whereas repeated circulars have been issued on the subject. The first circular upon that subject, which has a most important bearing on the charge as it affects the soldier, was issued in November 1829. It was confirmed by the Duke of Wellington in November 1849, and it was republished by the Duke of Cambridge in a General Order on the 21st of October 1856. Now no notice of this circular is taken in the Queen's Regulations, although it bears in a most important way upon the framing of the charge of "disgraceful conduct;" and whereas a man may be tried, under the strict letter of the law, as it now stands, for a single act of theft, commanding officers under those circulars are instructed not to try men on this charge for petty theft or dishonesty unless repeated. I have myself had frequent occasion to revise a charge of "disgraceful conduct," before submitting it to the court, it having been framed upon a single act of petty theft. I think that that is one important point. There is another case, namely, that of being drunk on or for duty. This crime is not defined, that I am aware of, in any circular. In some cases it may occur upon fatigue duty, and in other cases it may not, but I think that it should be clearly defined. For instance, fatigue duty of an artilleryman going into a magazine is a very important duty, and clearly a man employed on a fatigue duty of that character when he has been previously warned for it, ought to be tried for drunkenness; whereas, to try a man for drunkenness merely if he is taken by chance on parade, for an ordinary barrack duty, would not, I think, be right, and it is not the practice. I think that all that sort of thing ought to be defined in some measure by orders and regulations which are accessible to officers without searching for precedents, or for rules of previous courts-martial. I merely mention those two instances as they occur to me. There is also a third which I might mention, which has a very important bearing on the soldier, and that is the definition of charges of insubordination and of disobedience of orders. In one case a disobedience of orders may be a very trifling crime, and in another case it may be of a very serious character, and I think that some instruction to officers is necessary upon points of that character.

5133. Disobedience and insubordination are not classed together in any way as military crimes, are they; are they not always distinguished?—Disobedience may be a case of insubordination, if it is disobedience to a personal order. There are various grades of disobedience. There is disobedience to a personal order repeated several times, which may be insubordination. Disobedience to a garrison order is not at all looked upon in the same serious light as disobedience to a personal order.

5134. Could any case of disobedience come under the same heading as violence to a superior and insubordination?—It might come under the head of simple insubordination; at least, I believe so. Again, as to the practice of courts-martial, there have been regulations introduced into the late "Queen's Regulations," but I think that they are not altogether as full as they might be, and previously to those regulations officers were left very much to the guidance of their own experience, or to what they could pick up from unauthorized books. I may mention one case. Previously to the "Queen's Regulations of 1868," it was considered consistent with the practice of court-martial that a prisoner should always have the last rejoinder; he has been deprived of that right by the last "Queen's Regulations." Whether it is right or not that he should be so deprived I do not state, but I merely instance it as a case in point in which there was no regulation in existence previously to the 1st of January 1868. It is probable that there may be other cases of a similar sort. I have not looked carefully into the matter to see what is the case now, but I can easily understand that there may be still some cases of that sort which require regulation.

5135. A prisoner previously to the regulations of 1868 had by custom the privilege of the last rejoinder?—Yes.

5136. Is it by express regulation that that is taken away?—Yes, if you will refer to the "Queen's Regu- "lations" paragraph 772, you will see that it is so.

5137. Will you read the part of the regulation to which you refer?—"In those special cases where "evidence is allowed in reply, the second address of "the prisoner is to be made after such evidence and "immediately before the prosecutor's reply." Under that provision the prosecutor's reply would come last, instead of, as formerly, the prisoner having the privilege of last addressing the court. The former practice is contrary to the practice of civil law. Formerly the prisoner, according to the practice of courts-martial, had the last reply in all cases, at least I believe that to have been so.

5138. In your opinion is that a good practice or otherwise?—I think so; it gives a soldier an idea that his case is thoroughly considered, if he has an opportunity of having the last word in the case.

5139. (*Lt.-General Eyre.*) You are in favour of giving the prisoner the last word?—Yes, according to the old practice, and that was the opinion of Sir Charles Napier, in a work written by him on military law, in which he advocated it most strongly.

5140. (*Chairman.*) What other suggestion have you to make?—I think that it would be attended with great advantage if there was an authorized text book as to the maxims and laws of evidence, so as somewhat to guide officers in taking evidence. There is no such book at present. There is now no authorized book to which officers can refer, or to which, if they are desirous of getting information on this subject, they can refer in preparing themselves for the examinations to which as junior officers they are subjected previously to promotion.

5141. Is not "Simmons'" a good authority on general subjects?—It is generally considered so, and there is scarcely a court-martial of any importance which sits without its being upon the table, but it is not authorized, and never has been.

5142. You think that it ought to be authorized?—That or some other book.

5143. Do you think that there should be more of a text book than a book like "Simmons'"?—No, I do not know that there should; that book might be simplified if the Queen's Regulations were made more ample; a book of that character simplified by striking

out what had been settled by the Queen's Regulations would answer the purpose very well.

5144. What is the next point which you wish to mention?—I think that there is a very great inequality in the punishments awarded by courts-martial. This requires a remedy, which might be met by circulating for general information in the army the summaries of such decisions of courts-martial as had been approved by authority, without publishing the names of the prisoners or even the regiments to which they belonged; much in the same way as the trials at police courts are published in papers and assist magistrates in administering the law equally in different parts of the country. I think that it would be a great advantage if such information were circulated among garrisons and officers, and I would even carry it further. I think that there is very often great inequality in the minor punishments in the army; it is well known that in two regiments stationed in adjoining barracks in the same garrison, the punishments in many cases are very unequal, and likewise in different garrisons, and therefore I think it would be advantageous if the Horse Guards drew up and circulated a document of that sort as regards those punishments.

5145. At the same time would it be possible to lay down an invariable rule with respect to punishment. For instance, one of the objects of giving a commanding officer the power to punish is, that he is perfectly aware of the character of his men, and one punishment might be inflicted upon one man for a crime, whereas another punishment would be inflicted upon another man who was an old offender?—Yes.

5146. Could you carry on that system in the way which you suggest?—You would lay down a maximum punishment by regulation, leaving it to the commanding officer to award within that limit what he deemed the proper punishment, after in all cases considering the character of the prisoner; but still I think that it would be attended with advantage if circulars of the character which I describe were sent merely for information, so that an officer might know not only the practice of his own regiment but the practice of other regiments.

5147. (*Lt.-Gen. Eyre.*) Do you think that there might be a sort of general adaptation of punishments to offences by a sort of general rule?—I would not lay down such a rule, because I would not fetter the hands of the commanding officer, but I would merely circulate such a document for information.

5148. Could any general scale of punishment such as you suggest be adopted?—I think that it would be difficult. I do not see my way to it; but I think that, leaving large powers in the hands of the commanding officers, and leaving the exercise of those powers to them, it would be advantageous to give them that information.

5149. (*Mr. Whitbread.*) Must not any scale which was laid down be as wide as to cover the inequalities of the present practice?—Quite so.

5150. And your idea is that if information was circulated in the way which you suggest, a more uniform practice would obtain?—Yes.

5151. (*Chairman.*) What is the next point to which you wish to refer?—I think that there should be some guarantee that officers should have greater experience and higher qualifications before sitting upon courts-martial, and that some endeavour should be made to induce them to pay greater attention to the subject. The Queen's Regulations I think do not quite suffice to insure that the officers have an adequate knowledge of the subject before they are considered qualified as members of courts-martial. The regulations merely are, that an officer must attend all courts-martial at the station where he is quartered for six months, and that he must not be nominated a member of a court-martial until the commanding officer considers he is fit for the duty, but the regulation does not even prevent his sitting on a court-martial before the expiration of those six months.

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The system I adopted when in command of a very large number of young officers at the Engineer establishment at Chatham was attended with good effect, namely, to make all young officers attend courts-martial, not as members, but merely as supernumeraries, and take down the proceedings and draw up the finding and the sentence in every way as if they were adjudicating on the offence; this repeated a good many times with a great diversity of charges induces them to look up the subject and to study it; and coupled with a good examination afterwards by a board of which a Deputy Judge Advocate should be a member, would, I think, secure the officers having a better knowledge of the subject before sitting as members than they now have. In order to ensure a greater attention to their duties as members of a court-martial, it would be a great advantage to abolish (not for that reason only, but for other reasons likewise) regimental courts-martial. I think that they become too familiar with courts-martial, and consequently do not attach that weight to these proceedings which they otherwise would if they did not sit so often upon them.

5152. Do you think that it would be safe entirely to entrust the commanding officers of regiments with the powers of regimental courts-martial as at present exercised?—I think that it would be quite safe to entrust them with very much larger powers than they now have. I would not go to the extent of the punishments awarded by regimental courts-martial, because I do not consider them quite necessary. I think that the practice of our system is severe upon soldiers, excessively severe upon non-commissioned officers, and very lenient upon officers, but, with a greater limitation of power than is given to regimental courts-martial, I think that a commanding officer might deal with all cases which are now tried by a regimental court-martial. For instance, I think that an imprisonment of 14 days with hard labour if better arrangements were made within the prisons, and if the imprisonment was really a severe punishment, would meet all the cases which are tried by regimental courts-martial when coupled with fines for certain offences.

5153. Would you give to the commanding officer the power of 14 days imprisonment in that way with a fine?—Yes. I think that the advantage of it would be to place the responsibility upon the shoulders of a responsible individual instead of placing it upon three or four officers who have no individual responsibility to whom you cannot attach direct responsibility, and who have far less experience than the commanding officer. The exercise of their powers is under the oath of secrecy, and therefore you cannot attach individual responsibility to them.

5154. (*Lt.-Gen. Peel.*) Does not the commanding officer in approving the sentence of a court-martial take upon himself the responsibility?—No.

5155. If he thinks it too severe has he not the power of remitting it?—He has.

5156. And he therefore takes upon himself the responsibility?—To that extent he does, but it is a power which commanding officers exercise with reluctance, as a general rule, because it lessens the importance of courts-martial.

5157. According to your statement a man is tried by people who are not responsible at all, and who may inflict a heavier punishment than the crime deserves, and you say that there is nobody who has the power of checking it?—Or they may inflict a lighter punishment as the case may be; all responsibility of course is to their own conscience, which is a higher responsibility than you can trace.

5158. (*Mr. Whitbread*). Do you think that it would be safe to concentrate upon the commanding officer the whole responsibility of the punishment of a soldier rather than to continue the system which is now in force?—Yes, for offences now tried by regimental courts-martial, if exercised under proper supervision. If a commanding officer be not fit to exercise that power, I do not think he is fit to command a regi-

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ment, and I would give the Commander-in-Chief the power to remove an officer from the command of his regiment under those circumstances to the half-pay list.

5159. Do you think that if that power were given to the commanding officer it would not produce a still wider range of punishment than is now given under the system of regimental courts-martial?—I think not, when confining it within 14 days imprisonment.

5160. (*Lt.-Gen. Eyre.*) In giving that power, would you give a soldier an appeal?—Certainly, to a district court-martial, but never to a regimental court-martial, because I think regimental courts-martial, as courts of appeal, are looked upon as a farce by the soldier.

5161. (*Mr. Whitbread.*) You would give the power of appeal to a district court-martial?—Certainly.

5162. Do you not think that that would be giving an appeal to an appeal court which might upset the decision of the commanding officer?—There is an appeal now.

5163. (*Lt.-Gen. Eyre.*) That is only in cases of pay?—In almost every case in which the commanding officer punishes pay is affected. If a man is sentenced by the commanding officer to imprisonment for seven days his pay is stopped for seven days.

5164. (*Viscount Eversley.*) You would have all appeals go to a district court-martial?—Yes, to a higher tribunal than a regimental court. If the appeal from the commanding officer's decision is referred to a regimental court-martial, it is evident that it cannot be looked upon by the soldier with confidence, because it comes to the same commanding officer to confirm it.

5165. (*Mr. Whitbread.*) Then you think that it is anomalous that the officer who puts the machinery of trial in motion should be the officer who confirms the proceedings?—Yes, in cases of appeal.

5166. (*Chairman.*) What is the next suggestion which you have to make?—As regards the powers of a commanding officer, in addition to the power of imprisonment for 14 days I think that he should have the power of imposing a fine for drunkenness. At present the only man in a regiment whom the commanding officer can fine is a man who has a good-conduct badge. If a commanding officer sentence a soldier in the possession of a good-conduct badge to a punishment for what is called a regimental offence, which is entered in the regimental defaulter book, the man is fined a penny a day for a twelvemonth, and he loses one good-conduct badge. A drunkard cannot be fined by the commanding officer, and I therefore think that it would be attended with great advantage, especially as drunkenness is increasing in the army from the increase of pay, if the commanding officer had the power of fine; and instead of distributing that fine over a long period I think that it would be attended with advantage if it were stopped out of the man's pay as quickly as possible.

5167. (*Lt.-Gen. Eyre.*) What would you do with the money?—I have not considered that question, but I think that something might be done in the way of making use of it for the benefit of the soldiers in some manner. I do not think that it should revert to the Government.

5168. Would you repay some portion of it in case the man sustained his character?—I would make it final, because to keep up a running account with a man over a number of years would be very difficult in practice.

5169. (*Chairman.*) What is the next suggestion which you have to make?—I think that with the view of doing away with regimental courts-martial it would be attended with great advantage if the commanding officer could sentence to stoppage of pay for absence without leave for a longer period than he can now do, and also to make good necessaries or articles of clothing. A very large portion of the business of courts-martial is for trials on charges of absence without leave, or for making away with regimental necessaries.

5170. As regards the making away with regimental necessaries has not a commanding officer now the power to order that the necessaries shall be made good?—Yes, but not articles of clothing. He may do so with a man's consent.

5171. What is the next suggestion which you have to make?—I think that there should be much greater facility for discharging men of bad character than now exists. At present the difficulties in the way of getting rid of a man of bad character are enormous. Those men debauch the young soldiers, and we cannot get rid of them.

5172. (*Mr. Whitbread.*) Will you describe the difficulties?—In the first instance you can never now get authority to discharge a man unless he is marked. He must be marked with the letter "D" or with the letters "B.C.," or in such a way that a medical man would reject him on medical grounds, such as for instance, if a man bears marks of cupping, or something of that sort; but unless a man is marked it is almost impossible to get him discharged.

5173. You mean that the authorities will not allow the commanding-officer to get rid of him?—Just so.

5174. There is no other difficulty in the way, is there?—No; it is looked upon as a great punishment by the men, and it ought to be looked upon as one of the greatest punishments in the army, especially now, when the pay has been increased so much. I believe the difficulty with the authorities is that they are afraid of a man re-enlisting, and getting a fresh bounty; it is to protect the public; I think it is a great pity that a bounty is ever granted; in my opinion it is a bad thing, and never brought a really good man into the ranks.

5175. (*Lt.-Gen. Eyre.*) Do you think that it would stop desertion if you did away with the bounty?—I think that it would tend to stop the re-enlistment of deserters if you did away with the bounty.

5176. (*Lt.-Gen. Peel.*) But you say that a man considers it a punishment to be discharged. How would you prevent a man going immediately to another regiment?—You cannot prevent him from doing so.

5177. (*Mr. Whitbread.*) Might you not make it a fraudulent enlistment subject to a very heavy punishment?—It is a fraudulent enlistment. At his attestation a man is bound to declare whether or not he has re-enlisted, and if, when he has, he says that he has not, he commits perjury. I have never known a case of a man being brought to a court-martial for a fraudulent enlistment, without a previous desertion.

5178. Is it the practice in the British army to proceed with the utmost severity against men who enlist, who have previously deserted?—It is the custom to bring them to trial, but I do not think that the punishment attached to it is generally so severe as it might be; because I think that a man who has deserted, and re-enlists, ought to be punished with the greatest severity.

5179. What punishment is there now for that offence?—He is generally brought before a district court-martial, and he is marked with the letter "D"; he loses his previous service, and gets anything less than two years' imprisonment.

5180. What kind of punishment do they generally give for that offence,—do they give six months' imprisonment?—Yes, I should think about that. In my practice I have not met with any cases of men who have re-enlisted, who have been merely discharged from regiments as an incorrigible character.

5181. (*Lt.-Gen. Peel.*) How is a militiaman treated in the line before his service in the militia has expired?—If he enlists fraudulently without the permission of his commanding officer, he is given the option of being placed under stoppages until he has made good the bounty, or of being tried by court-martial, and as a general rule he accepts the stoppage from his pay.

5182. Supposing that you discharge a man as a bad character, the only crime which he commits is

saying that he has not served before; he falsely stated that he had not served before?—Yes. In a regiment it very soon becomes known by a man's comrades whether he has served before.

5183. So long as he behaved well would you bring him up?—That would depend upon the commanding officer.

5184. (*Mr. Whitbread.*) Do you not think that some means could be devised of excluding from the army men who are bad characters?—A man who has been discharged, and who re-enlists, is almost sure after a few months' service in his new regiment to be known to have been a soldier, in which case if it were a crime capable of being brought against him that he had re-enlisted under false pretences, having made a false attestation, and had received money, therefore as a fresh bounty, fraudulently, it would act as a great preventative to these men re-enlisting.

5185. (*Chairman.*) Would you increase the power which a commanding officer has now to discharge a soldier. The power which he now has is, I believe, merely to report a man to the Horse Guards, and to apply for permission to discharge him. Would you give a commanding officer a greater power than that?—No. I think that the power should be exercised by a higher authority, but that there should be greater facilities for discharging a man.

5186. Would you give the power to the general of the district to do it?—Yes, to the general officer commanding abroad; but in England I would reserve the power to the Horse Guards. There have been cases within my own knowledge where men have been brought back to my corps from penal servitude, and have gone on in the service. Now that is entirely derogatory to the character of the corps in which they serve, and there is no possibility of getting rid of them.

5187. But no objection even now, I presume, would be raised to such a man being discharged, if you made the application?—I made application in such a case, and could not get rid of the man.

5188. What was the reason given why you could not get rid of him?—The man was not marked. I do not remember positively whether that was the reason, but I presume that it was.

5189. (*Lt.-Gen. Eyre.*) How do you account for that man coming back to you, he having been a convict?—He was convicted by the civil power for burglary, and not long after he came back to the corps the canteen was broken into, and it was traced to him.

5190. With regard to marking, do you consider that it is done with the view of punishing a man, or that it is merely to protect the public?—It is no doubt a punishment, but the primary object of it is to protect the public.

5191. (*Mr. Whitbread.*) Do you think it absolutely necessary?—With our present system I think that it is, but I think that if you improved the system of the service it would not be necessary.

5192. (*Viscount Eversley.*) In what way would you propose to improve it?—By making it an honourable profession, in which you should discharge and get rid of the bad characters generally, combined with a shorter period of service.

5193. (*Mr. Whitbread.*) So as to give a man who felt himself unsuited to the army an opportunity of getting out of it?—Yes. I cannot myself conceive a life which is more thorough purgatory for a man than to find after he has enlisted that he has a distaste for the army.

5194. (*Lt.-Gen. Eyre.*) Do you think that good men who do not now enter the army, but who have rather a turn for it, would more readily enter the army in consequence of bad men being discharged from it?—Yes; no doubt anything which raises the character of the army would tend to raise the character of the recruits.

5195. (*Chairman.*) You would not dread the effect which too easy a discharge would have upon men who wanted to get out of the army? You do not think that they would sometimes be induced to commit a crime for the purpose of being discharged?—I do not think that good men would do so.

5196. But in your opinion would it not be a temptation to any man to commit a crime for the purpose of being discharged from the army?—It might be so in some few cases, but if the army is popular, and if you have no difficulty in getting recruits, you do not suffer any loss by it.

5197. Supposing a regiment was suddenly ordered to some very unpopular district, which was not liked by the army generally, might it not then be a great temptation to a soldier to commit a crime in order to get discharged from the army at that particular time?—The case to which I alluded is not the commission of a particular crime, but the case of an habitually bad and incorrigible character; a single crime of course would have to be punished in a proper way.

5198. (*Mr. Whitbread.*) To put it in another way, a man must very eagerly desire to get out of the army to commit a crime in order to get out of it?—Yes.

5199. (*Chairman.*) But might not that inducement be created by a command to go to a very unhealthy climate?—You have always the power of not exercising it.

5200. Have you any other suggestion to make?—I think that one of the causes of crime in the army is the want of proper means for carrying out discipline. I would allude to separation in the regimental guard-rooms of court-martial prisoners from the ordinary daily prisoners who are placed there for purposes of discipline. I have lately had the command of a depôt at the head-quarters of the corps of Engineers, where a very large number of recruits are continually joining. These lads perpetually, for trivial offences, such as being late at roll call, are placed in the guard-room, and they there find themselves forced into the company of some of the very worst characters of the regiment. I think that tends very much to increase crime in the army, especially under present circumstances, where we cannot get rid of those bad characters. I have known some of the worst characters in the guard-room for two months, and even more, pending court-martial, and I think it very conducive to the ruin of young soldiers that they should be forced, as it were, into the company of these men in the same room night and day.

5201. Do you think that that is an alteration which could be easily made at the different head-quarters of regiments?—It would have to be made in the appropriation of the barracks, and possibly it might entail an alteration of barracks, but it is still a thing which might be carried out in time.

5202. (*Lt.-Gen. Peel.*) That objection would equally apply to the men on guard, would it not?—No, because the prisoners are confined in a separate room. I should have said that I referred to the prisoner's room, instead of the guard-room; it used to be, in former days, the guard-room.

5203. Could not you keep these men who were late at roll call in the guard-room?—The guard-room is frequently not large enough.

5204. (*Chairman.*) Is there any other suggestion which you have to make?—I think that some of the minor punishments do not very much tend to improve the character of a soldier. Placing arms in the hands of a soldier as punishment drill does not tend to increase his love for his profession.

5205. At the same time, is it not very difficult to find a punishment of that kind?—I think that by frequent roll calls, breaking in upon the time of men of bad character, and requiring them to march up and down without arms, rather than with them, would answer the purpose.

5206. Is not the great punishment the having to carry knapsacks?—I fancy that the great punishment is not having their time to themselves, and having to answer roll calls.

5207. (*Lt.Gen. Eyre.*) Do you approve of extra drill as a punishment, which it now very often is?—

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It is a very good punishment, I think, if exercised without arms.

5208. (*Chairman.*) Have you any other suggestion to make?—There should be a very considerable improvement in regimental cells, so that the sentences of commanding officers might be carried out in the barracks in which regiments are quartered, because I think that in many cases it injures a soldier to be marched through a garrison town as a prisoner. It lessens his self-respect, and until a man is confirmed as a bad soldier it is much better that his punishment should be carried out in his own regiment.

5209. (*Mr. Whitbread.*) You mean as compared with being sent to a military prison?—Yes.

5210. Would not that objection be very much obviated if a warder was sent from the military prison in plain clothes?—But the soldier has not plain clothes to go in; he still marches through the town, and everybody knows that he is a prisoner, and this lessens a man's self-respect.

5211. (*Chairman.*) Have you any other suggestion to make?—With regard to insubordination, now that corporal punishment has been done away with, something more is necessary.

5212. What would you suggest?—I think that in gross cases of insubordination, instead of merely detaining a man in the prisoners' room awaiting trial, it would be attended with great advantage if the commanding officer had the power of placing him in a cell upon bread and water until his trial took place. I have had a most wanton case, where a man has insulted an officer on parade in the grossest way, and the only power has been to march him to the prisoners' room, but if he could be marched off to a cell and fed upon bread and water I think that it would undoubtedly be attended with great advantage.

5213. You do not think that it would cause discontent in the army that a man should be subjected to a severe punishment (which that would be) before being tried?—I think not in that case. I do not see how that state of things could be met without some power being given to the commanding officer.

5214. (*Mr. Whitbread.*) Would it not meet your view if such a man was simply confined in a cell, without the punishment of bread and water?—I think that it would have some effect upon others if that was done.

5215. (*Lt.-Gen. Eyre.*) It is necessary to tame him?—Yes.

5216. (*Chairman.*) What further suggestion have you to make?—I think that with regard to the crime of desertion it acts hardly upon the soldier in some cases to try him for desertion after 21 days' absence. There is a power in the commanding officer of the district, upon the application of the commanding officer of the regiment, to allow a man in such cases to be tried by an inferior court; but I think that it has the effect of preventing many a man, who has gone away, perhaps, for a lark, from returning to his corps from the mere knowledge that in all human probability he will be tried by a court-martial, and be marked with the letter "D." I would leave the charge of desertion to be determined entirely by the animus, unless a man were absent for a very long period. A man may now be tried for desertion if he is only absent one hour, if the animus can be proved; but I would extend the trial for absence without leave to a longer limit than 21 days.

5217. (*Lt.-Gen. Peel.*) Would you do away with any limit at all, and leave the animus as it stands now?—I think that that would be a very great improvement.

5218. (*Lt.-Gen. Eyre.*) Is not that the case now in the navy?—I do not know.

5219. (*Chairman.*) What is your next point?—Commanding officers constantly try to get men to place money in the savings bank, but there is a great objection on the part of soldiers to placing money in the regimental savings' bank, and in England they are now getting very largely to use the Post Office savings' bank, and I think that that is to be attributed to the fact that for desertion, although it is not a part of the sentence, they forfeit their money in the savings bank.

5220. (*Lt.-Gen. Peel.*) Under what regulation is that?—Under the Royal Warrant regulating savings' bank. Of course, in the case of desertion the men cannot be found, and, therefore, forfeit the money; but I think the mere fact of a possible forfeiture under any circumstances by regulation tends to give soldiers a want of confidence in the regimental savings bank.

5221. (*Mr. Whitbread.*) But there would be no difficulty in having all the money placed in the Post Office savings' bank, and you might make the regimental savings' bank a branch of the Post Office savings' bank, might you not?—Yes, in England, but not abroad; a man takes his savings wherever he goes.

5222. (*Chairman.*) Is there any other point which you have to mention?—I think that the power of reprimand and of reducing a non-commissioned officer a step in rank is important. At the present time a court-martial cannot even reprimand a non-commissioned officer, he can only be sentenced to reduction to the ranks, and there is a great reluctance on the part of commanding officers to try non-commissioned officers for slackness of duty, and so on, because the punishment is so very severe; it is, in fact, ruin.

5223. Do you think that it would be safe to entrust commanding officers with the power of punishing non-commissioned officers, seeing that when a non-commissioned officer is punished he loses so much prestige with the regiment?—I think that it would be quite safe to place him down one rank, and also for courts-martial to punish him. This principle has been adopted with commissioned officers, and I cannot see why an equal measure should not be meted out to non-commissioned officers.

5224. (*Lt.-Gen. Eyre.*) Where you would give a commanding officer the power to reduce a serjeant, or a corporal, a certain number of stripes, would you give that man a power of applying to a district court-martial?—Certainly.

5225. (*Chairman.*) Have you any other suggestion to make?—I think that it would serve to give soldiers more confidence as to the way in which they were treated if officers were treated in the same way as themselves with regard to courts-martial, and were not allowed to evade punishment freely by retirement. In the limited sphere of my own experience, I have known a case of an officer having deserted from arrest, and remained absent for several months, and having been allowed afterwards to return to his duties. Another officer who, according to the strict letter of the law, if the same treatment had been applied to him as to a private soldier, would have been tried for desertion, was tried merely for absence without leave, he having been absent far beyond the 21 days usually allowed to a private soldier.

5226. (*Lt.-Gen. Eyre.*) In dealing with non-commissioned officers would you be at all disposed to impose fines?—No.

5227. You would confine that to drunkenness?—Yes, and to making kits good, and things of that sort and also absence without leave. I would allow a commanding officer to deal with 21 days' absence without leave; at present he can only deal with five days' absence without leave, and that is a very fruitful cause of courts-martial.

5228. (*Chairman.*) You do not think that if there was any relaxation in the present rule it would be a temptation to soldiers to prolong their absence beyond five days?—I think not. As a general rule, if the powers of the commanding officer were extended to 14 days' imprisonment, I think that he would have full power of dealing with the case, and giving quite as effective a punishment as can now be given by a regimental court-martial, but he cannot now deal with it because he cannot stop the pay.

5229. Is there any other point which you have to suggest?—As regards the proceedings of courts-

martial, I think that it would be attended with advantage if there was no summing-up on the part of the Deputy Judge Advocate, and if he merely read the evidence instead of summing-up; because I think that the prestige attending a person in the position of the Deputy Judge Advocate is very likely to lead the court in its decision.

5230. Is not that an advantage to the court?—I think not. Unless a deputy judge advocate had very great practice in the law, he might, I think, unintentionally give a bias to the court by his summing-up.

5231. Is it not very desirable that, where a court is formed as a court-martial is, there should be some summing-up, in a case of great difficulty for instance? Take a case of misappropriation of public money, is it not rather desirable that the same power should exist in a military court as exists in a criminal court, and that before a decision is given upon it the evidence should be commented upon?—If it were exercised by judges of the great experience of those who are on the bench, it would be a very good thing; but as exercised by persons of less legal experience, I think that it is not desirable.

5232. (*Lt.-Gen. Eyre.*) Do you not think that the Deputy Judge Advocates might be educated so as to qualify sufficiently to do it in a good judicial way?—No doubt they might, but as matters are at present I think that their summing-up might be left out.

5233. (*Chairman.*) What is the next point which you have to suggest?—I think that the examination of witnesses *vivâ voce* might be attended with advantage, and especially if regimental courts-martial were dispensed with, because in that case at a very small expense non-commissioned officers might readily be found in garrisons who would qualify as shorthand writers, so that you could ensure there being an accurate record of the proceedings; at the same time the Deputy Judge Advocate should not be dispensed from keeping his notes of the proceedings. Then as regards former convictions, I think it very desirable where a record of former convictions is produced before courts, to exclude all charges of which a prisoner has been found "not guilty." In some cases, where a man has been arraigned upon several charges, he may have been found not guilty upon several of them, and guilty upon one. The record of the proceedings of the courts-martial sets out in full all those charges, and the finding upon each. I think that where a man has been found not guilty, the mere reading of the charges upon which he has been tried would naturally tend very much to bias the court against him, and that it would be attended with advantage to leave out all records of that sort. I also think that it would be attended with great advantage if, when a court finds a verdict of not guilty, the prisoner were discharged at once, so that there should be no revision upon the finding, though there might be a revision upon the sentence.

5234. With regard to the sentence, are you an advocate for retaining the power of revision?—Certainly.

5235. Would you retain that power for aggravation? There are two modes of revising the sentence, you may send it back for increasing or for diminishing the punishment; would you retain the power of re-assembling the court with a view to increasing the punishment?—No. I think it necessary to correct informalities and irregularities in the sentence.

5236. But you would not retain the present power in the convening officer of re-assembling the court for the purpose of increasing the punishment which has been awarded?—No, I think not. At present the difficulty with which we have to deal is the irregularities of regimental courts-martial. If regimental courts-martial were done away with, and if a judge advocate were always present at a district court-martial, I apprehend that there would be very little occasion for revision of the sentence for informality. If a Judge Advocate attended all district courts-martial, then the necessity of revision would in most cases be done away with. The power of revision might be necessary to correct irregularities.

5237. But you are very decidedly against the power being retained of re-assembling a court to re-consider the finding?—I am decidedly against it; but I think that it is necessary with the present constitution of courts-martial.

5238. With the present system you would retain the present power?—Yes.

5239. (*Mr. Whitbread.*) But if the officers who composed regimental courts-martial were carefully instructed in military law, and if the military law itself were made clearer, do you think that then it would be safe to abandon that power of re-assembling a court?—The officers in such case must be very much better instructed than they are now, and must have very much more experience.

5240. (*Chairman.*) What is the next point which you have to mention?—There is a point which refers to a little matter of detail, but it may be and has been in some cases, I believe, attended with inconvenience, and that is the method in which the proceedings are dealt with after the conclusion of the court-martial. The president now sends them to the approving officer, who sends them to the regiment in order that they may be completely carried out, and from the regiment they are sent back again to the President, and by him they are sent to the Judge Advocate-General. This is merely a circumlocution, and it would be much better if they were passed on from the commanding officer of the regiment to the Judge Advocate-General without going back to the President. I do not see the use of it, and I fancy that there have been cases where proceedings have been lost in that way.

5241. (*Lt.-Gen. Eyre.*) With regard to the making away with necessaries, which is a very fertile source of courts-martial, do you think that any precautionary measures on the part of the departments with respect to clothing and necessaries could be taken, so as to make them more traceable and less marketable?—It might be done with all articles, unless perhaps articles of exterior clothing; but even then there would be great difficulty about it, because discharged men have a right to take away their articles of clothing, and to dispose of them; and after new clothing is issued to soldiers, their old clothing is considered their own property.

5242. Do you not think that a better arrangement might be made regarding the clothing of discharged men, both as a matter of discipline, and also for the credit of the service?—It would be attended with great advantage if any means could be devised by which every soldier on his discharge could be rigged out in a suit of plain clothes, so that he should not go about the streets in the worn-out uniform of the service.

5243. Do you see any objection to the present system of condonation of offences by any duty, however slight?—No, I do not see that there is any inconvenience in that way from the present system.

5244. You do not think that it wants any alteration?—No.

5245. If a man now carries his arms it is a condonation of his offence?—I think that a different construction might be put upon this rule. For instance, if a man misbehaves upon the line of march, the carrying of his arms ought not to be put upon his comrade, he ought to carry his own arms.

5246. (*Chairman.*) Can you give the Commission any idea of the origin of the performance of any service being regarded as an act of condonation?—I cannot at present.

5247. Can you point out any benefit which the service or the public derives from that regulation?—Condonation, I think, generally implies placing arms in the hands of a prisoner.

2548. Can you point out to the Commission any advantage which the public, or the military discipline, derives from a regulation by which a man waiting for trial cannot be ordered to perform any regimental

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military act in consequence of its being an act of condonation if he does it?—I think that it is attended with advantage that a man who is himself a prisoner should not perform any military duty with arms in his hands involving trust; but I do not see any objection whatever to his performing any other duty in the barracks, such, for instance, as cleaning a room or the barrack square, except the inconvenience which might arise from watching him, and having an escort with him; I think that that must be the reason for not making him do such duties.

5249. Have you not stated that you have known an instance of a man waiting for trial, or for the proclamation of the sentence for three months?—Yes.

5250. During those three months, if he had been ordered to perform any military duty whatever, would it not have been an act of condonation?—Yes.

5251. (*Mr. Whitbread.*) You have stated that our system presses very heavily upon the soldiers, very severely upon the non-commissioned officer, and very lightly upon the officers; you have since making that statement recommended a punishment short of degradation to the ranks being given to non-commissioned officers, and also that officers should not be able to escape punishment by retirement. Have you any other suggestion to make which should equalize the punishment in all branches of the service?—There are already in the Code three punishments for officers, there are reprimand, placing them down in their corps, and cashiering. With non-commissioned officers there is but one punishment.

5252. And you have suggested to us to adopt others?—Yes.

5253. Have you any other suggestion to make?—I think that it would be attended with advantage if it were ordered that in all cases general courts-martial should be published in general orders, and district courts-martial in district orders, irrespective of the rank of the person tried, whether he be an officer, a non-commissioned officer, or a soldier.

5254. (*Lt.-Gen. Eyre.*) With respect to the Deputy Judge Advocate you have expressed a very important opinion. Referring to the summing up by the Deputy Judge Advocate, do you object to his laying before the court the exact evidence upon both sides without any expression of his opinion?—I think that the best course would be for him merely to read the evidence, and for the court to make the finding without any other statement whatever, but merely the notes of the evidence. Of course he would assist the court in the sentence to ensure its being within their powers and in due form.

5255. Do you think that in a case of difficulty upon any points on the part of the court, the opinion of the Judge Advocate should be decisive?—I think that it ought to be competent to the court to adjourn, and to refer to higher authority, in the case of their having a doubt as to the correctness of the opinion of the Judge Advocate.

5256. At Chatham there is generally an average of 1,200 men of the Royal Engineers?—Yes.

5257. Of course in that number of men there must be a considerable number of days' imprisonment, but it is not probable that you can off-hand say how many. It appears that some regiments there have been only 120 days' imprisonment in a whole year. Can you explain that?—Does the 120 days' imprisonment include imprisonment by the commanding officer?

5258. No by courts-martial?—I cannot understand how this has occurred. The corps in which there are fewest courts-martial, are the Cavalry, the Engineers and Artillery, and I look upon that as arising from the greater occupation of the men, which reduces crime. I cannot understand how any regiment could have got down to so low a figure of imprisonment as that.

The witness withdrew.

Adjourned.

APPENDIX.

No. 1.

Reports by Colonel Hope Crealock, Military Agent, Vienna.

REPORT ON THE MILITARY TRIBUNALS OF AUSTRIA BY COLONEL HOPE CREALOCK, MILITARY AGENT, VIENNA.

Military Auditors.

There is a class of officers in the Austrian army which bear some resemblance to that of Judge Advocates in the English service. The whole administration of law and justice in the Army comes within the duty of their department.

The peace establishment consists of—

6	Auditor-Generals.	
14	Colonel-Auditors.	
19	Lieut.-Colonel Auditors.	
40	Major Do.	
124	Captain Do.	1st class.
124	Do. Do.	2nd class.
62	1st Lieutenant Do.	

together with an unlimited number of young men attached learning their duty for the auditoriat.

Auditoriat of an army in the field.

In war, the army in the field has a field staff auditoriat and an army corps auditoriat, formed for the administration of law in the operating army.

Regimental auditors.

Every regiment of cavalry, infantry, artillery, or engineers has an auditor on its establishment whose business it is to administer justice and law within the range of their respective corps.

Military Tribunals.

The ordinary military tribunals of Austria are divided into three classes.

First Class, lower Courts.

The first class consists of the military courts in connexion with the bodies of troops, military establishment, invalid courts, garrison courts, and district courts.

Second Class, Courts of Appeal.

The second class is a military court of appeal for the whole army, and is fixed at Vienna.

Third Class, supreme Court of Appeal.

Third class is the supreme military court of appeal attached to and forming a separate department of the imperial war ministry.

Administration in Second and Third Class.—Administration in First Class.—Garrison Courts.—District Courts.

In the courts of the second and third class, the administration of both civil and military criminal cases is combined, while in the lower tribunals of the first class this is only to be found in the regimental and invalid courts. The garrison courts treat the military criminal cases and the district military courts the civil cases only.

Composition of First Class Courts.

The first class of courts are formed of eight members including the auditor; the other seven are military assessors, the senior of whom acts as President.

The practice of these courts is detailed further on.

Competency of Courts.

Courts-martial can adjudicate on all sorts of crimes which do not come under the head of "Disciplinary Offences," and they possess full powers of punishment subject to the confirmation of the military authority under whose command they are.

Second Class.—Composition.

The second class of courts is, as before stated, a court of appeal, and is composed of a bench of judges under the direction of a general officer as President; a general auditor conducts the business of the court, and there are 14 Colonel auditors as referees and the necessary number of clerks.

Practice.—Duty.—Competency.

The verdict of this court is given after a general meeting has decided on the case submitted, a meeting takes place weekly; the duty of this court is to pass judgment on all cases sent up by inferior courts, either in appeal or in the way of reference. This court is competent to decide a case or else to refer it to the supreme court of appeal at the war ministry. It is the duty of this tribunal to watch the proceedings of the inferior courts.

Third Class Courts.—Composition.

The supreme court of appeal, or third class military tribunal, is presided over by a general officer, higher in rank than the president of the second class court, a general auditor is attached to him, and the necessary number of auditors and clerks.

Duty.

The province of this court is to decide all cases sent up in appeal or reference by the lower courts.

"Gerichts herrn," or competent judicial military authority.—Powers.

The right of ordering an individual to be tried by a court-martial or other military tribunal, the right of confirming the sentence given by such a tribunal, or of commuting it, or of pardon, belongs to the military authority under whose command the individual may be, as duly laid down by law; but though such a person has the above rights, he has no power to increase the amount of punishment awarded by sentence of a military tribunal.

These military judicial authorities are as follows:—

The proprietor of a regiment has authority over all those forming part of it; the chief of the general staff, over all members of it; the Inspector General of Gensdarmerie over all individuals composing the military police; Captains of the Imperial Body Guard, over all those under their command.

General commanding powers.

But the General commanding, is the Gerichtsherr or judicial military authority over all military men who are not belonging to the above bodies of troops or establishments, and also of officers of the rank of Colonel and upwards.

Army in the field.

With an army in the field the General commanding is also the supreme judicial authority.

Practice of Courts.

The practice of the military courts is laid down by law, and it is the duty of the respective military judicial authorities to watch the strict observance of the regulations.

Regimental Courts.

In the following corps and regiments special military tribunals exist permanently, to which are entrusted the adjudication of all legal questions within the range of their corps; such proceedings take place either in the name of, or in the presence of the competent military judicial authority.

Corps.

Imperial Life Guards, Infantry regiments of the line, Frontier regiments, Titler Frontier regiments, Tyrol Jager regiments, all Cavalry regiments, and all Artillery regiments.

Delegation of penal Powers.

The proprietor of a regiment or department has the power of delegating his powers for the punishment of non-commissioned officers and men to the colonel commanding, or other officer commanding detached bodies of troops.

Trial of persons for military crimes.

An individual accused of a military crime not coming under the head of a disciplinary offence, can be ordered to be tried by the military court of his regiment or department, composed of individuals belonging to the same, who, after hearing the evidence and report of the auditor, will pass sentence by majority of votes, and will forward their verdict and sentence to the judicial military authority for confirmation before the sentence is carried into execution.

Civil cases.

Civil cases and law suits are decided by commanders of troops in the name of the Gerichtsherrn concerned, through the medium of the auditors in accordance with law and regulations.

Sentences can be referred to Courts of Appeal.

The sentence of these tribunals is under certain circumstances laid down in the criminal laws, submitted to the military court of appeal and war ministry, but the person under sentence has no power of appeal. Civil cases, however, tried by these courts, are to be regularly examined by the first court of appeal, and a party concerned may also appeal to the supreme court.

Regimental and invalid Courts.

The difference between the regimental and invalid courts is, that while the former adjudicate under the authority and in the name of their respective proprietors or Gerichtsherrn, the commandants of the latter have no such judicial authority, and consequently the invalid courts adjudicate in the name of the general commanding, under whose command they are.

The general commanding a district is the judicial military authority for all troops under his command, not subject to regimental or battalion tribunals, and he will administer the law to such persons by the Garrison and Invaliden Haus auditorials.

The former form the garrison courts under the authority of the general commanding, and are subject to the first and second military courts of appeal in the same way as the other military tribunals of the first class, but have only to adjudicate on military offences of a criminal nature.

All troops and individuals under the military command subject to garrison courts, for criminal military offences, are subject to the district military courts for civil cases.

This last tribunal stands next in rank to the military courts of appeal, second and third class. They are stationary, and embrace the whole military district command. The placing of the army on a war footing does not affect them.

Drum-head court-martial, vide § 60, *Standrecht, page* 124, *Infantry dienst reglement.*

In cases of war and tumult, or under on certain occasions, such as wholesale desertion in time of peace, individuals may be tried at once by "drum-head court-martial," and the sentence can be carried out on the spot.

Das ausser ordentliche Kriessrecht, page 126, *Dienst reglement,* § 61.

There are also extraordinary courts-martial which are composed of members from various corps and regiments, such a court is generally assembled when an officer considers the court of his own corps is not impartial.

DETAILS OF PROCEDURE.

Preliminary Court of examination.

Constitution and practice of military courts.

A military court of examination is formed of eight persons, including the auditor. The President is the senior officer, in any case; if all of the same rank, the senior of that rank, and of higher grade than the accused.

For the trial of non-commissioned officers and soldiers, the court will be composed of an auditor, one private, one lance corporal, one corporal, one sergeant, a subaltern officer, a captain, and a field officer as president.

If the accused is a commissioned officer from the rank of captain downwards, the court will consist of the auditor, two lieutenants, two first lieutenants, two captains, and a field officer as president.

In particular cases a lower rank may take the place of a higher one, but in no case is it permitted for a non-commissioned officer to take the place of a commissioned officer.

As regards such a proceeding the lower military employés rank with the men, while the higher military employés rank with officers.

For all other persons who are subjected to military courts, the assessors are composed in the same way as for the trial of soldiers, but the judicial authority (Gerichtsherrn or the person who has the right of ordering the trial, confirming the sentence, &c.), has the power of ordering that the whole Court should be composed of commissioned officers.

The examination of witnesses, writing down of the evidence, and the other proceedings of the Court, are to be conducted by the auditor in the presence of two officers as witnesses.

The assessors are to be selected as much as possible for their intelligence and good conduct, but they must know the language of the accused. No relations or personal friends or enemies of the accused, or such as may not be considered impartial towards him, or those who give evidence in the case, are to be allowed to act as assessors, either in the preliminary inquiry or final proceedings against the accused.

When the auditor does not speak the language of the accused, a commissioned or non-commissioned officer will be sworn in as his interpreter; such a person may also be an assessor.

When the judicial authority (Gerichtsherrn) does not order to the contrary, the examination will take place in the office of the auditor, and a non-commissioned officer will be posted at the door of the room or tent to prevent listeners.

Before the prisoner enters the court his irons (if he has any) are to be removed.

Officers, and persons of that rank, will have a seat provided for them, and until after the publication of the sentence are to be treated with due respect.

During the trial a dignified, quiet, and attentive demeanour is to be observed. The auditor is not to be interfered with in his duties, neither the person under examination to be interrupted or disturbed by ejaculations or signs.

When an assessor is of opinion that something has been neglected in the examination, or has not been made sufficiently clear, he will ask the President to remove the prisoner, and when this has been done he can lay his objections before the Court.

The auditor will write down the statements of the accused as literally as possible; uncertain or doubtful expressions are only to be recorded after they have been explained. The depositions of the accused are to be read to him at each interruption of an examination, or at the end of it; and when the accused wishes any alteration made it must be put on record in the written deposition.

This deposition will be first signed by the accused, then by the assessors, beginning with the person of lowest rank, finally by the President and Auditor.

The accused must sign each separate sheet; if he cannot write he makes a mark, which must be duly witnessed by the signature of one of the assessors, who will in addition to his own name write that of the accused.

All such sheets have to be fastened by a thread, which will be sealed by the seal of the Court.

JUDICIAL SENTENCE AND COURT-MARTIAL.

A judicial sentence differs from a court-martial in so far that it has less formality; it is only used for cases of offence committed by non-commissioned officers and men.

Eight persons are also necessary to pass such a sentence, which is decided after the auditor has commented *vivâ voce* on the details of the case under consideration, and explained the law referring to it. The votes are then taken, beginning with the junior member of the court and ending with the President. The

majority decides the sentence, which will then be signed by all the assessors and the auditors, and must then be submitted to the competent judicial military authority (Gerichtsherrn) for his written confirmation; when this has been done the sentence will be read to the accused in the presence of all the assessors in an anteroom.

A court-martial is also composed of eight assessors, including the auditor, in the same manner as an examination court.

Should a field officer be tried by such a court-martial, the President will always be an officer of superior rank; two of the assessors will be also field officers, and two subaltern officers will be deducted to make place for them.

Lieutenant-colonels or majors are always to be tried by individuals not belonging to the same body of troops; in such cases the convening officer will apply to the district court for the field officers required.

The same persons who have taken part in a preliminary court of examination should, when possible, also form part of the court-martial, as they are already well acquainted with the details of the case.

A corporal is to act as orderly with every court-martial.

The court-martial having assembled a cross is placed on the table with a candle on each side; the prisoner is then brought before it, and is asked whether he has any well-grounded objection to be tried by the members of the court assembled; should he have any the prisoner will be removed from the court. The objection has then to be submitted to the assessors forming the court, who will decide by vote, beginning with the junior members, whether the prisoner's objection is a valid one or not. Should the majority of votes agree with the objection, or should the member objected to himself wish to be removed, then another assessor of the same rank as the person objected to is to replace him. But should the majority consider that the objection made by the prisoner is groundless the President will make known such decision to him, and will inform him that his objection cannot be considered.

This circumstance is to be recorded in the proceedings of the court-martial.

When there are no objections made, or if found groundless, then the auditor will next proceed to charge the members of the court with the importance of their duty; he will impress on them that they must give the case their impartial and earnest attention and judgment, and decide according to law, without prejudice, favour, or affection, that they will keep the verdict and sentence secret until the publication of the proceedings, and that they will not reveal the manner of voting.

The auditor will then read in German the oath of a judge, which will be taken by the assessors of the court. The deposition of the prisoner is then read in his presence, and he is asked if he has any objection to make to it; should he wish to say anything, his remarks are to be added to the deposition; if he has nothing to say he will, after signing his deposition, be removed.

The auditor then reads out his written report and the other documents.

In his report he has to collect all evidence bearing on the case, to enter into all its details, the statements of the accused, to explain the crime which it would appear the accused has committed, the circumstances which appear to speak in his favour or increase his culpability, and to propose either his condemnation or acquittal, when it must be left to the option of the assessors to pass sentence according to law and their own convictions. Whatever may appear doubtful to an assessor is to be explained clearly to him. The auditor will if necessary read the deposition and the law. If he should make a mistake in a military question the President is bound to inform him.

Should an assessor demand further information on a matter, and insist on it notwithstanding the statement made by the auditor, then the President will take the vote of the court (in the usual way), as to whether such a further instruction is necessary or not. This must be recorded in the proceedings, and when the court is adjourned in consequence, then the convening officer is to be informed by the President and auditor.

Should the majority find such information unnecessary, and decide to go on with the case, the assessor who demands the further information is also bound to record his vote.

To enable the assessors to make up their minds as regards the verdict, the President will allow them, with the exception of the auditor, to retire before passing it.

Each assessor is to be guided by a sound reasoning, impartial, and clear judgment.

The proceedings closed, the auditor collects the votes, beginning with the junior member of the court, and he writes them in his report, no one is to be pressed to give a particular vote, for every one is to form his judgment on his own conviction.

The auditor makes a special report on the voting and will attach it to the proceedings of the court.

The voter having recorded his vote sits down and waits for the conclusion of the voting.

The President and auditor vote last.

The votes are then read by the auditor to the Court, and he then sums up the decision, which he and the President verify with their signatures.

Each assessor and the auditor give one vote, but the President has two votes, making nine in all.

The sentence is passed by the majority; if divided equally, that is, five and four, then the whole votes are to be divided, and the most severe placed against the milder sentences, and a balance struck, and the five who agree will decide the sentence. For instance, if capital punishment is to be inflicted, then at least five votes must be for it; but when four votes are for death, one for 20 years' imprisonment, and four for 15 years' imprisonment, then the sentence will be fixed at 20 years.

The auditor must form the sentence short and clear, and it must be signed by all the assessors. It will not be recorded in the sentence whether the voting was unanimous or not.

In order that the manner in which the different members of the Court voted may be kept secret, it is laid down that after the sentence has been passed, the written report of the voting shall be placed in a separate cover, which is to be sealed with the seals of the Court and the President. This document will then be added to the others belonging to the proceedings, and inscribed "Report on the Voting," which words will be verified by the signatures of the President and auditor.

No one has the right to see the "Report on the Voting," except the higher tribunals, who will if necessary apply for such a document; but in such case they will take the necessary precautions for its safe custody.

In the written report of the auditor laid before the Court will the following words be written under the President's signature, "Has been submitted to the "Court-martial," and has to be signed by the auditor. If this document consists of more than one sheet, each sheet must be sealed by the seals of the Court and the President.

When all has been put in order the written documents are forwarded to the convening officer by a captain and subaltern officer, who, in the event of the sentence requiring the approval of a higher tribunal, will direct that the whole of the documents be transferred to such tribunal.

When there are good grounds to reduce the rigour of the sentence, or to pardon the prisoner, the President and auditor may add these grounds for recommendation to mercy to the other documents.

When the officer whose duty it is to approve the sentence resides in the same place as where the Court has been sitting, the assembled Court awaits for further orders.

As soon as the sentence is returned to them for publication, the President breaks the seal and hands it over to the auditor. The approving officer has to write on the proceedings in his own handwriting, "to be pro- "mulgated and carried out," or "is to be promulgated, "but in consideration of (here follows the ground) the "sentence is remitted or diminished" as the case may be. Under these words the seal of the approving officer has to be affixed.

The assembled Court then leaves the house or tent in which it has sat, and forms in line. The President draws his sword and orders two trumpeters who are in attendance to sound the call three times.

The prisoner if in irons has them removed and is then brought before the assembly, the auditor then reads his sentence, and if his punishment is death a staff is broken before him.

The trumpeters then sound the retreat. The auditor writes on the proceedings, the days of its promulgation and execution, and signs it.

The sentence on persons of the rank of officer is to be published in the room or tent, and the windows, &c. to be left open, but before promulgation the call is always to be sounded.

Except in cases of necessity no court-martial is to be

held on Sundays, holidays, or in the afternoon, and the preliminary inquiry and the court-martial should not take place on the same day.

If the sentence of a court is not one of "death" or "corporal punishment," the superior consideration or revision by a higher tribunal may be demanded within a period of 30 days after the promulgation of the sentence; in such a case the written proceedings would be transferred to a military court of appeal.

Should an officer be sentenced to be "cashiered," he will be asked when informed of the sentence, whether he wishes to appeal against it, if he does the sentence will be promulgated only when the answer of the court of appeal has been received on the case.

At the commencement of 1868, the new system of courts of honour came into force in the army and navy. These courts are chiefly for the trial of officers for conduct unbecoming their character as officers, and for offences not exactly coming under the head of military crimes. A full report of the practice and constitution of these courts of honour will be found at the English War Office.

Punishments which can be awarded by Commanding Officers.

Disciplinary offences and punishments, vide Drieust reglement for the infantry, 1st vol., page 106.

The following punishments may be ordered under the head of "discipline," by commanding officers of bodies of troops:

Extra guards as punishment, camp or barrack arrest, binding a man in a cramped position: such punishments may be inflicted on non-commissioned officers and men.

Heavy marching order parades at muster roll; put on bread and water; arrest in the guard-room; in prison, solitary confinement; in the black hole. In general these punishments are only to be inflicted on privates; should a non-commissioned officer be sentenced to imprisonment, he has to be confined in a room where there are no privates if possible.

Arrest in quarters, this is only inflicted on those holding the rank of officer.

Provost arrest is inflicted on those holding the rank of officer, cadets, non-commissioned officers, and persons of similar rank. This confinement will take place at the quarters of the Provost or some other convenient chamber.

Solitary or black hole confinement can be aggravated, by not being allowed to smoke tobacco, by being ironed, by fasting on bread and water; but such additions to the punishment are not to last longer than one day at a time, but may be again inflicted on the third day.

Arrest in the dark room is only to be ordered to the same man twice in the course of a month, when this punishment extends over 14 days, then the prisoner must be allowed to go out of the black hole for 24 hours during that period.

Persons who have the right to order these punishments.

A non-commissioned officer on detached service can give punishments not exceeding 48 hours in chains, but an undetached non-commissioned officer has no penal powers.

A subaltern officer has no penal power when his detachment is quartered in a station, but when such troops are detached alone, then the commanding officers of their corps may delegate certain penal powers to the subalterns in command, who will then possess the penal powers of a detachment commander.

A detachment commander can inflict, in addition to any public reprimand on parade, which have to be placed on record, the following:—

1. Heavy marching order parades.
2. Imprisonment: he may place a man under the surveillance of another, or a non-commissioned officer, who may also be the administrator of his pay, extra fatigue duties, or guards, work, or drill.
3. Barrack, camp, chamber arrest, for four weeks, during which period the man has to perform all his duties.
4. Arrest, and binding the man in a cramped position for 24 hours, but the man must be released for two hours. After the lapse of each six hours these periods of two hours are to be included in the sentence.
5. Imprisonment with or without irons for four, or under particular circumstances, even for eight days, which may be made worse by fasting for two days on bread and water.
6. Solitary confinement for 48 hours.
7. Imprisonment in a dark room for 48 hours. If for crime simple arrest only is ordered, but there being no convenient room disposable the sentenced had to be confined in a dark room, then the period of his arrest must be diminished, in consideration of the increased severity of the punishment.
8. Flogging, 20 lashes. [Suspended in peace, except under certain circumstances, *vide* further.]

Subaltern officers are only to be sentenced to chamber and provost arrest by a detachment commander, when he is detached, and when the crime is of that nature that he is unable to refer the matter to higher authority; but he will in any case immediately report what he has done.

Battalion commanders have the same penal powers as detachment commanders, but on an increased scale, viz.:—

1. Barrack, camp, and chamber arrest for eight weeks.
2. Arrest, with or without irons, for 14 days, and to fast two days in each week.
3. Solitary arrest for four days.
4. Arrest in a dark room for three days.
5. Flogging, 30 lashes. [Suspended under certain cases, *vide* on.]

The detached field officer has the same penal powers over the men and non-commissioned officers as the commandant of a regiment.

Each head of a department has the penal powers over all such persons subject to martial law, who, without belonging to his command, commit trespasses on his department.

The regimental commandant has full disciplinary powers; he can order the following punishments:—

1. Arrest in quarters up to 14 days.
2. Provost prison, with or without increased severity, up to three months.
3. Simple arrest up to eight days.
4. Black hole up to four days.
5. (Used to be flogging up to 40 lashes.) Suspended.
6. Temporal degradation of non-commissioned officers up to one year.
7. Degradation for an unfixed period of non-commissioned officers, as an example.

The proprietor of a regiment has the disciplinary powers of a regimental commandant over all persons in it, including the colonel, but if he orders his arrest he must report at once to the general commanding.

Corporal Punishment.

The former rules for corporal punishment, which are to a certain extent restricted by a circular issued on 22nd January 1867, were as follows:

A man could not be flogged before he had completed his 18th year, the punishment could only be applied on private soldiers, non-commissioned officers *pro tempore* degraded could not be so punished; soldiers decoré with a medal for valour, and distinguished veterans, were only to be flogged in a private room, and in presence of non-commissioned officers only. Before the punishment was inflicted a surgeon had to testify to the man's fitness to undergo his sentence. The rules for the application of the punishment are as follows:—

The man has to keep on his trousers and drawers; he is flogged on his backside, the punishment to be inflicted at once, and six or eight seconds to elapse between each blow; the punishment must not be divided, but all given at the same time. If a man is sick when sentenced, he will receive his sentence when recovered. The man is flogged with a simple hazel stick without any iron at the end, quite smooth, and not thicker than three-quarters of a Vienna inch.

A man condemned to six months imprisonment could receive instead 25 blows, if from six months to a year, from 25 to 40 blows, if from one to five years, from 40 to 75 blows.

When a punishment with hard labour is changed into corporal punishment, the flogging will be more severe in proportion, but will in no case exceed 75 blows.

If a man is condemned to five years hard labour and he is ordered to receive 75 blows instead, he will suffer part of his imprisonment besides.

When a man is condemned to from six months to one year with hard labour, it is considered equal to a corporal punishment of 40 blows.

By the circular order of 22nd January 1867, No. 218, approved by His Imperial Majesty on 14th of the same month, it was ordained:—

§ 1.

That all persons liable to corporal punishment, according to the Articles of War, can in future only be flogged when they have been previously convicted of disgraceful conduct, and repeat an offence of a similar class. (*Vide* Strassgesetz, § 30, page 14.

§ 2.

The military criminal tribunal can only inflict a punishment of corporal punishment for crimes coming under the head of "disgraceful conduct." Persons who are convicted of such conduct for the first time can only be so sentenced by the court when the law lays down that such a crime as the individual has committed is to be punished by imprisonment with hard labour for longer than 365 days, or arrest for longer than two years.

§ 3.

In agreement with § 2 the following acts are to be considered as coming under the head of "disgraceful "conduct":—

a. The ordinary crimes mentioned in Parts 4 and 5 of Articles of War. (*Vide* Strassgesetz Book, § 332, page 135, and § 526, page 202.

High treason, injuring His Majesty or a member of the imperial family, disturbance of the peace, insurrection or tumult, sedition or mutiny, open violence, breach of duty or misuse of official power or inducing thereto, falsification of credit paper, coining, religious disturbance, rape, violation and other crimes against chastity, murder, mortal fight, procuring abortion, making away with a child, duelling, incendiarism, thieving, embezzlement, robbery, plundering, fraud, bigamy, slander, &c., Part 4: and offences against peace and order, Part 5.

b. The military crime of desertion, plotting desertion, and cowardice.

c. Incorrigible drunkenness, when this is proved by repeated punishments during a year.

§ 4.

As soon as an individual by the commission of crimes coming under the head of disgraceful conduct has rendered himself liable to corporal punishment, the fact has to be stated in his sentence pronounced by the tribunal, but if he should become liable from being punished for such faults under the disciplinary code, then it will be published in orders by his commanding officer.

§ 5.

A register is to be kept with every detachment or military authority whose duty it is to keep registers regarding their subordinates, showing those men who from faults have rendered themselves liable to be flogged, and the crime which rendered them liable is to be there stated.

§ 6.

An individual who may thus have become liable to be flogged may again obtain his immunity from such a punishment when he has committed no such crimes as above mentioned for a whole year. This freedom from corporal punishment is also to be placed on record in the register.

Corporal Punishment only suspended in peace under certain circumstances.

§ 7.

The rules laid down in the Sections from 1 to 6 will not be in force in time of war, neither on long marches in peace. Under such circumstances the regulations of the service and the circular order of 10th March 1835 remain in force.

No. 2.

(*Translation.*)

Vienna, December 22, 1868.

General Order regarding the Abolition of Regimental Courts of Justice, and the Institution of Brigade Courts.

1. The regimental courts in the Imperial Army, with the exception of those in the border regiments, are hereby abolished from 31st December 1868, and on the 1st January 1869 their place will be filled by the introduction of "brigade courts."

2. Until a new military criminal code is issued the brigade courts will administer justice in accordance with the laws existing at present for penal proceedings in military courts.

3. The regimental courts will hand over to the district military courts, in whose territory they may be stationed, all pending lawsuits and other matters and documents in their hands.

4. The parties concerned (with reference to the preceding paragraph) will receive their instructions from the regimental commanders.

5. From 1st January 1869 lawsuits addressed to officers commanding regiments, and other petitions with reference to private affairs, will not be accepted by them, but the cases are to be referred to the district military courts.

6. From 1st of January 1869 commanders of regiments, in case of death, will order themselves the evidence to be taken in writing, &c. as laid down by the service regulations; but in important cases they can apply to the civil courts for assistance, and in places where there are garrison auditoriats they will apply to them. Brigade courts being only for criminal proceedings have nothing to do with such affairs.

The district military courts have to apply in private and in criminal suits to the garrison auditoriat for necessary instructions, and where there is no auditoriat, to the civil courts concerned.

7. The current correspondence, and other non-judicial affairs, are as much as possible to be wound up, and those not finished to be transferred to the commanding officers of regiments.

8. Regimental commanders will detail boards of officers to perform these duties, and to register judicial proceedings.

9. An inventory of the service report is to be forwarded to the General Command, who will cause them to be transferred to the brigade courts concerned.

10. The documents referring to inquests still pending are to be shown in order, and transferred to the brigade courts concerned.

11. Criminal proceedings referring to such troops, whose brigadier is not the President of a brigade court, will be transferred to a brigade or garrison court by the General Command, with reference to the places where they are stationed, and other considerations.

12. The General Command is further authorized in cases where troops are stationed a long distance from their own brigade court, to transfer the said troops, as regards punishment, to another garrison or brigade court which may be nearer to them.

13. The General Command will invest the brigade commander with the power to approve sentences and of pardon over all men who are by the *ordre de bataille* belonging to their command, or who may be transferred to their command in accordance with previous paras.

14. All judicial proceedings are to be closed by the end of this month, and are to be transferred to the military court of appeal.

15. It is the duty of the General Command to provide rooms for the accommodation of prisoners transferred to the brigade courts, and to make necessary arrangements.

16. One of the brigade prevosts will be appointed, as a temporary measure, to perform the prevost duties at the brigade prison; the man best adapted, from his knowledge of the language required, will be chosen for this service.

17. Officers required for the brigade courts are to be provided.

If more than one auditor is detailed for a brigade

court, it follows, as a matter of course, that proper quarters must be provided for him.

18. The nomination of brigade auditors will follow shortly.

Those regimental auditors not appointed to brigades will, as required, be nominated to either district military courts, garrison or brigade courts, which appointments, as regards pay regulations, are to be considered as permanent.

19. For each brigade court eligible men, who are fitted by their knowledge of the language of the regiments, are to be selected from the ranks and made clerks according as they may be required.

20. The brigade auditors have the same right as the regimental auditors to a military servant, but supernumerary auditors attached to a court have no right to a servant as laid down by regulation for officers becoming supernumerary through reduction.

The brigade courts will receive the same allowance for stationery as was till now allowed for regimental courts.

21. The uniform of the brigade auditors, and that of the supernumerary auditors attached to brigade and other military courts, is the same as that laid down for garrison auditors till now. But the auditors are allowed to wear their present regimental auditors' dress as long as they please.

22. The above rules do not at present apply to the military frontier, the military schools, the invalid houses, and for the navy.

True translation.

W. Hope Crealock,
Colonel, Mil. A. Vienna.

22 Dec. 1868.

No. 3.

Letter from Colonel Blane, Russian Military Agent, to Sir Andrew Buchanan, G.C.B., on Russian Military Code, dated September 25, 1867.

Sir, St. Petersburg, September 25, 1867.

A new military code for the Russian army, sanctioned by His Majesty the Emperor in 1863, was reported upon by Colonel Crealock in a despatch No. 26, January 26, 1866.

A special commission, however, under the presidency of his Imperial Highness the Grand Duke Constantine, and including among its members the Grand Duke Nicholas, the Minister of War, &c. &c., was subsequently appointed with a view to further modifications and reforms in the system of military justice.

The result has been an improved code, which received the Emperor's sanction on the 15th of May last, and will come into operation next month (September, old style).

A short analysis of this new code may not be devoid of interest, although perhaps inapplicable to our military system.

The details given below are extracted from several articles lately published on the subject in the "Invalide Russe."

The code is divided into two parts, viz.:—

1st. Legislative enactments.

2nd. Modes of procedure.

The second part comprises four books or sections, viz.:—

Book 1st. General rules of procedure.

Book 2nd. Order of procedure in the military tribunals.

Book 3rd. Exceptions to the general rules of procedure as to military crimes.

Book 4th. Rules applicable in time of war.

The new code establishes three descriptions of military tribunals, viz.:—

A. Regimental courts-martial.

B. Tribunals of military districts.

C. Supreme tribunal of St. Petersburg.

Regimental courts-martial are established in all regiments, or commands held as equivalent to regiments, for the trial of soldiers whether or not privileged by birth or other rights, but limited as regards the gravity of offences which such courts are competent to deal with.

The regimental courts-martial are permanent courts and are comprised of a president (a field officer nominated for one year) and two members (officers below the rank of field officers, and nominated for six months).

These officers are not exempt from regimental service during the period of such judicial service.

No special formalities are laid down for these tribunals, but a "subaltern" (officer below the rank of field officer) is specially attached to the court to watch and regulate the proceedings.

The commanding officer orders the court-martial or disposes of the matter summarily at his discretion.

The prisoner defends himself and is examined by the court.

The court is open or closed at the discretion of the commanding officer.

The proceedings are submitted to the commanding officer, who either confirms or forwards them for the decision of a higher tribunal.

The proceedings when confirmed cannot be appealed against except on questions of loss and indemnity to persons suffering from military crimes.

The second instance in the organization of military justice is the district tribunal, established in each military district or government and bearing the name of such district.

By reason of the vast extent of country temporary district tribunals are at times called into action by competent authority in parts of the country remote from the head-quarters of the district.

These courts in general are charged with the trial of superior officers and the investigation of matters exceeding the powers of the ordinary regimental courts-martial.

The courts are composed,—

1st. Of permanent members, viz.:
- The president (one of the military judges, of whom the number is determined by the district authorities), and of—
- A military member who has passed his examination in law.

2nd. Of temporary members, viz.:
- 2 field officers.
- 4 subalterns.

These temporary members are appointed for six months, and the qualification is eight years of service, four of which must have been active service, or three years in command of a corps.

Each tribunal has a "procureur militaire" (Judge Advocate) to conduct the prosecution. He has several assistants, civil or military, all of whom must have studied law, and for this purpose a military law academy has been established, to which officers are admissible only after four years of active service.

In these courts the military element is made to preponderate, but as the military courts are also empowered to try civilians implicated in military crimes, the complicated necessity arises of trying cases involving both military and civil law.

In the present military code the president only is necessarily of superior rank to the prisoner, subalterns may sit on the trial of general officers, but in the forthcoming military code even field officers are not eligible as members of a court-martial assembled for the trial of a general officer, except in cases where in very remote stations a sufficient number of general officers could not be assembled without great difficulty.

The decisions of district military tribunals cannot be annulled except on questions of illegality.

In some cases, however, the decisions are submitted for the sanction of the Emperor.

The permanent members are removable to other districts, and may be dismissed by order of the supreme military tribunal.

A prisoner arraigned before a district tribunal is entitled to the assistance of counsel, either military or civil.

The supreme military tribunal is the highest military

court of appeal. It sits at St. Petersburg, but sections of this tribunal holding the same powers are established in remote districts such as Siberia and the Caucasus.

The supreme military tribunal and its sections are composed of a president and members, being general officers and the higher functionaries of the War Department who have either studied law or have experience in the application of military law.

The Judge Advocate-General is attached to the supreme court sitting at St. Petersburg.

The third book of the second part of the military code recites the exceptions to the ordinary criminal proceedings:—

1st. Cases relating to religion are tried with the concurrence of the ecclesiastical authorities.

2nd. Political crimes.

3rd. Crimes committed by military magistrates or judges in the exercise of their functions.

4th. Criminal matters relating to military administration.

5th. Certain cases of combined military and civil jurisdiction.

All military political crimes are now brought before the supreme tribunal, or a special military commission, the president being nominated by the Emperor, and the charges submitted and the decisions subject to the sanction of His Majesty.

The last part of the new military code relates to the mode of procedure in time of war.

In time of war when an army passes the frontier a superior military field tribunal is established, and is composed of two members of the ordinary supreme military court, of whom one is president, and three members selected from the list of presidents of the district tribunals, the military judges, or the judge advocates (procureurs militaires).

The number is subject to reduction in cases of necessity, such as in a besieged fortress, or when a force in the field is not large enough to furnish the usual number of qualified officers.

A substitute for the procureur general militaire (judge advocate-general) is attached to the supreme field tribunal, and entrusted with the judicial correspondence of the commander of the forces.

When columns are detached from the main body in time of war a certain number of military law officers accompany the column in order, in cases of necessity, to form military tribunals for the investigation of the proceedings of minor courts.

The mode of procedure of courts-martial is the same in time of war as of peace, with the exception of certain powers granted to the commander of the forces in order to avoid inconvenient delays.

The commander of the forces has also the power of pardon or of mitigating the sentence.

The jurisdiction of military tribunals in time of war is regulated by the military code at present in force, and by the supplemental code of 20th Nov. 1864, by virtue of which, in districts where martial law is proclaimed, civilians not connected with the army are not subject to military law except in cases mentioned in the imperial proclamation of such state of siege; but all civilians attached to, employed with, or authorized to follow the army are subject to military law.

All the laws of military practice in time of war are applicable to an army, or detachments of such army, acting in the presence of an enemy; and consequently officers commanding detached corps have for the time being powers similar to those of the commander of the forces.

The new code also confers upon the commander of the forces and officers commanding detached corps special powers in time of war for the purpose of facilitating the administration of justice in cases of necessity; but in all such cases of departure from the usual mode of proceeding special reports are to be made through the superior authorities to the Emperor.

It will at once be remarked that this military code has been framed in its details and modifications to meet the various exigencies of this vast country, as well as its political and social necessities. It has no doubt been much influenced by the requirements of the service arising out of the policy of the Government in regard to Poland and the newly-acquired territories on the frontiers, in the Caucasus, and in Central Asia.

I have the honour to be,
Sir,
Your most obedient, humble servant,
(Signed) ROB. BLANE.

His Excellency Sir Andrew Buchanan, G.C.B.,
&c. &c. &c.

No. 4.

MEMORANDUM on MILITARY LAW and the PRACTICE of COURTS-MARTIAL in PRUSSIA.

Question I.—Constitution of the Tribunals.

The military judicature is under the control of the commanders of corps, divisions, garrisons, or regiments, who have not only the power of ordering the trial of offenders, but of punishment without trial within certain limits, which will be defined in my answers to questions 5 and 6.

The tribunals are of two kinds, superior and inferior, respectively denominated "Kriegsgericht" and "Standgericht."

General officers commanding corps, divisions, or garrisons are entrusted with jurisdiction over both, officers commanding regiments over the inferior tribunal only.

Before the superior are arraigned all officers.

All non-commissioned officers with the sword knot when subject to a graver punishment than arrest. (*See* subsequent explanation.)

Non-commissioned officers without the sword knot, and privates when subject to a graver punishment than arrest, reduction and transfer to second class.

Before the inferior are brought all cases which fall below the above-mentioned category, but the penalty for which exceeds the limits of summary jurisdiction.

In fact the kriegsgericht represents our general, district, or garrison courts-martial; the standgericht the regimental or detachment courts. A remarkable difference between the superior and inferior courts is that the members of the former are sworn, not those of the latter. The mode of procedure appears to be as follows:—

On the report of the commission of a crime, the evidence in support of the fact (speius facti) being previously collected and laid before him, the officer entrusted with the power of judicature, assisted by the auditor of his corps, division, or garrison, an officer commanding a regiment by his adjutant or other competent officer, decides whether the case is so far proved as to require more formal trial, if so, whether before the superior or inferior tribunal, or whether it can be summarily disposed of. A court of inquiry, "Unter-"suchungsgericht," is then assembled, composed of an auditor when an official of that department forms part of the command in a regiment of the officer who has assisted the commanding officer in the preliminary inquiry, and according to the rank of the accused and the gravity of the offence alleged against him, of one or two officers as assistants.

It is the business of this court to take the evidence, the witnesses being sworn by the auditor, and reduce it to proper form, and to receive the defence of the accused. The accused is allowed legal counsel when charged with civil offences which entail more than three years' imprisonment, and military counsel when charged with military offences which entail death or more than 10 years loss of freedom. In other cases he must defend himself. The nature of the court of judicature is then determined by the convening officer, and it is ordered to assemble.

A Kriegsgericht on a private soldier or lance-corporal is composed of:—

A major as President.

Members	Two captains Three non-commissioned officers	Two lieutenants Three lance-corporal or privates.

On a non-commissioned officer:—

A major as President.

Members	Two captains. Three serjeants or non-commissioned officers with the sword knot.	Two lieutenants. Three corporals (Unteraffigiere).

On a first or second lieutenant:—

A lieut.-colonel as President.

Members	Two majors Two first lieutenants.	Two captains. Two second lieutenants.

On a captain:—

A colonel as President.

Members	Two lieut.-cols. Two captains.	Two majors. Two first lieutenants.

On a major or lieut.-colonel:—

A major-general as President.

Members	Two colonels. Two majors.	Two lieut.-colonels. Two captains.

On a colonel:—

A lieut.-general as President.

Members	Two major-generals. Two lieut.-cols.	Two colonels. Two majors.

In cases which entail the penalty of death, or imprisonment for life, each class must be composed of three instead of two members.

A court-martial on a general officer is composed, besides a general of high rank as President of three classes, each of three members, of which the junior class is one degree lower in rank, and the senior one degree higher in rank than the accused, unless the composition of the court is specially ordered by the King. A standgericht also consists of five classes, similarly composed, but with a captain as President.

A superior court for the trial of a military official is composed of five members:—A field officer as President; a captain; two auditors; an official belonging if possible to the same branch as the accused. One of the auditors to act as reporter.

The inferior court is composed of:—A captain as President; a lieutenant; two officials, if possible of the same branch; an auditor or competent officer as reporter.

In the case of a military official of and above the relative rank of field officer, the President must be a general officer, and the senior member a field officer.

If it is not possible to find members of the required rank, the classes must be filled respectively by officers or soldiers of the next grade.

The court now assembles. The auditors or officiating officer in the inferior court reports to the President that the members are present and that the court is legally constituted. The accused is admitted, and has the same right of challenge as is granted by our military law. The members are then sworn by the auditor in the presence of the prisoner. The documentary statement of evidence prepared by the court of inquiry and the prisoner's defence are then read, and the accused is asked if he has anything further to allege in defence or in bar of judgment. If he has, it is to be entered on the proceedings. The prisoner is then removed.

The auditor now explains the case in all its bearings, actual and judicial, to the court, and proceeds to demand a finding and sentence in conformity with the laws. The President can then add any remarks which he may consider necessary as bearing on the purely military features of the case. The statement of the auditor is reduced to writing, read to the Court, and added to the proceedings. Any doubts or misunderstandings of the members are to be explained by the auditor, and the President then calls on the Court to vote by classes separately. The auditor then invites the Court to determine whether the accused is "guilty" or "not "guilty;" if "guilty," to what punishment he shall be sentenced, if "not guilty," whether the acquittal is complete or qualified. If "complete," whether it is so through proof of innocence or failure in proof of guilt.

The classes then vote, commencing with the junior, each member signing his opinion. The President votes last of all.

Should the finding of a class or member of a class materially diverge from the legal view of the case, the auditor must endeavour to reconcile the misconception; if unavailingly, the fact must appear in the proceedings. Should the Court consider the evidence insufficient, a special report must be made to the convening officer.

An actual majority of votes is necessary to conviction; but members not concurring in the finding are, in case of guilt, bound to vote on the sentence. In all cases of conflicting opinion the least severe grade of punishment is to be adopted. The result of the finding and sentence is to be communicated by the auditor to the members, and signed by the auditor and the President.

The members are then cautioned by the President that the finding and sentence are not to be divulged. The sentence must contain the christian and surname of the accused, the regiment or port in which he serves, the crime, sentence, and legal dues payable, or acquittal: further particulars connected with the service and conduct of the accused, whether previously convicted of the same or of other crimes, a précis of the actual circumstances of the case, the grounds for the decision, and of the laws bearing thereon.

A recommendation to mercy or of a remittal of part of the sentence must emanate from a *majority* of the members.

The proceedings are forwarded for confirmation through the convening officer, who confirms if he has the necessary powers.

Sentences requiring the confirmation of the King are laid before His Majesty by the auditor-general through the military cabinet.

The approval of the King is required to all courts-martial on officers, to the reduction of an ensign with the sword knot; in cases of high treason to the punishment of death. (*See subsequent explanations.*) The approval of the King, or, in cases of the second class, of the War Minister, was formerly required to all punishments which exceeded a certain limit; but powers of confirmation have recently been largely extended to the generals commanding corps, with the four exceptions above mentioned, and of very peculiar and serious cases. Generals commanding divisions confirm sentences of courts held within their command when the punishment does not exceed a year's deprivation of liberty.

The grounds for confirmation are to be stated by the confirming officer, in writing, after conference with the corps or division auditor, who, however, must not be the official of that class who has acted as judge advocate on the trial, and the confirmation is signed by him. No sentence is valid until confirmed. The sentence and confirmation are, without delay, to be read to the accused by the auditor, in the presence of all the members of the court of inquiry, and he is to be informed that the sentence is now valid and will be put in execution. The accused is entitled to a copy at his own expense, if convicted; gratis, if acquitted.

The publication is to be verified in a protocol, and added to the proceedings.

Sentences which entail the civil punishment of death are communicated and published through the civil power.

Sentences must be communicated to the immediate superior of the accused.

The convening officer is charged with the execution of the sentence, which must in no way depart from the strict terms of the confirmation, and is regulated by the general law.

A commutation or alteration of sentence can only take place through the competent court.

Question 2.—Nature of their punishments.

The punishments are—

1. Death, which for military offences is inflicted by shooting; for civil offences by beheading.

2. Hard labour on the public works (the military term for which is Baugefangenschaft, the civil Zuchthausstrafe) may be compared to penal servitude, and is only inflicted on offenders after they have been dismissed from the army. The prisoners work in chains. I know of but three military prisons of this class in Prussia, Danzig, Torgau, and Minden.

3. Festungsstrafe, or imprisonment in a fortress, is equivalent to the imprisonment carried out in our own military prisons, and can only be inflicted on private soldiers or non-commissioned officers previously reduced to the ranks; the minimum is three months. The offenders are placed in a company of punishment, "Straf Abtheilung," in a fortress, and are employed under military surveillance on the fortifications or in some other military labour, being kept in confinement when not at work. The period of this imprisonment does not count as service.

4. "Festungs arrest." Confinement in a fortress is inflicted on—

a. Officers.
b. Non-commissioned officers with the sword knot, not sentenced to reduction.
c. Ensigns with the sword knot "Portepée "Fähnriche;" young men serving as "avan-"tageurs," that is, with the view of obtaining an officer's commission; and one-year volunteers who are not sentenced to reduction to the second class.

Officers undergoing this punishment forfeit half their pay; should the punishment exceed one year the service does not count, nor at all to persons under *b* and *c*.

The minimum of Festungs arrest is six weeks. Officers are subject to no severer form of imprisonment than Festungs arrest.

5. Arrest, of which there are four degrees—

a. Strenger arrest, severe.
b. Mittler arrest, middle.
c. Gelinder arrest, light.
d. Stuben arrest, confinement in quarters.

The minimum of these punishments is 24 hours.

Severe arrest is only inflicted on private soldiers, and non-commissioned officers previously reduced, is carried out in a dark solitary cell without bed place, except on each fourth day, which the offender will pass in the cells allotted for sentences of light arrest, under the conditions of middle arrest. Offenders under sentence of Festungsstrafe undergo this punishment in a cell with "Latten," that is, with a lath floor, on which the offender can neither sit nor stand without pain; there must be an interval of 48 hours between each 24 hours of this punishment.

Middle arrest is only inflicted on non-commissioned officers without the sword knot and private soldiers (non-commissioned officers of a higher grade subjecting themselves to this punishment must first be reduced), and is carried out in a solitary cell. The pay is forfeited, the use of tobacco, spirits, and similar indulgencies is withheld, and the offender is subsisted on bread and water, with the substitution on every fourth day of the usual warm food, and of exercise in the open air under proper surveillance.

Light arrest is inflicted on non-commissioned officers of all classes, and on privates (the latter, however, cannot be sentenced to this punishment by court-martial), and consists in simple solitary confinement.

Arrest in quarters is inflicted only on officers, and is either close or open; open arrest being undergone in the officers' own quarters, close in a room set apart for that purpose. In neither case are visitors permitted to be received. An officer breaking his arrest at once forfeits his commission. Field and officers of higher rank are only subject to open arrest. Subalterns subjecting themselves to a severer punishment than arrest for 14 days, are in all such cases to be awarded close arrest.

The maximum period usually awarded is six weeks, in certain exceptional cases 12, but after the first six weeks the offender is then to be allowed exercise in the open air every second day, and in the case of a punishment of middle arrest of this duration warm food on every alternate day. Arrest in quarters and severe arrest are never to exceed six weeks. Non-commissioned officers and privates cannot be sentenced by court-martial to confinement to quarters or barracks. No officer or soldier can be *sentenced* to loss of orders or decorations. Where this forfeiture is legally contingent on certain sentences the pleasure of the King must be taken on this part of the punishment. The loss of war and long service medals does not require the confirmation of the King.

6. Only private soldiers and non-commissioned officers previously reduced to the ranks can be sentenced to degradation to the second class. This punishment entails the loss of war and service medals, of the national cockade, and of claims accruing from length of service. The restoration to the first class can only take place with the approval of the King.

7. The other punishments remaining to be mentioned are reduction of non-commissioned officers; 8, expulsion from the service of private soldiers and of non-commissioned officers previously reduced, which entails the forfeiture of all claims which have accrued from length of service, inability to hold state employment and loss of nobility, corresponding exactly to the civil punishment of loss of civil honour; 9, cashiering (of officers) which entails corresponding consequences.

10. Removal from the list of officers, whereby the offender loses rank, title, claims which have accrued from service, and is incapable of re-appointment; lastly, dismissal from the service, which entails the forfeiture of claims and prohibition of the officers' uniform.

Of the punishments above mentioned the following bear corresponding relation to each other, viz.:—

Eight months' Baugefangenschaft are equivalent to a year's Festungsstrafe.

Four months' Festungsstrafe are equivalent to six months' Festungs arrest.

Festungs arrest to arrest in quarters and light arrest.

One week's severe to two weeks' middle and four weeks' light arrest.

The reduction of a non-commissioned officer with the sword knot is equivalent to six, that of a non-commissioned officer without to three months, Festungsstrafe. A fine of five thalers (15*s*.) and one week's light arrest are considered alike. Death by shooting is carried out by 18 men ranged in three ranks, so that the front rank is five paces from the condemned. The forms to be observed are laid down by the common law of the country. A civil sentence of death is carried out by the civil power to which the condemned is to be delivered for publication and execution of the sentence, as also when Zuchthausstrafe is awarded in place of Baugefangenschaft. The duration of a punishment dates from the drawing up of the sentence, except in the case of those who have not been placed in confinement during trial, when it commences with the date of their arrest. When no severer punishment than simple imprisonment is awarded, the accused is not to be kept in confinement during the interval between trial and confirmation of the sentence. The execution of sentences of simple imprisonment may be delayed in peculiar cases when required by the exigencies of the service. During marches or in camp the withdrawal of indulgences, such as the spirit ration or the use of tobacco, and as regards private soldiers' employment on fatigue duties may be substituted for middle or light arrest. Instead of severe arrest, the delinquent may be tied to a tree or wall, for three hours daily during the term of his sentence, in such manner that he can neither sit nor lie down, but this must not take place in public. With the sanction of the King, the commander-in-chief of an army in the field may commute the punishment for desertion of Festungsstrafe for some more applicable punishment. Sentences of degradation to the second class, cashiering or dismissal, or of imprisonment entailing loss of decorations are not to be carried into effect on possessors of orders or decorations of honour without the sanction of the King. Sentences entailing dismissal from the service are to be published in the official organ of the civil district in which the offender has his domicile, in the case of a foreigner in the official organ of his garrison.

A notification of the execution of the sentence must be entered on the proceedings of each trial. The proceedings of courts-martial are to be forwarded at the end of each quarter to the office of the auditor-general for examination.

Question 3.—Prevalence of drunkenness.

There is very little drunkenness in the Prussian army compared with others. This crime is, however, more prevalent in some provinces than in others. I have had the advantage of a long conversation on this subject with an officer on the staff employed in a judicial capacity, and was very much interested by the information afforded, which is to some extent corroborated by my own observation during the campaign of 1866. There is a good deal of drunkenness in the Prussian and Polish Corps, 1st and 5th, but the 1st corps furnishes the best horsemen and the most dashing soldiers in the army, and the Poles are also capital soldiers. Crimes of insubordination are most frequent in the 3rd corps. The native of the Marshes is a saucy, self-sufficient fellow, and the Berliner is an exaggerated type of his fellows. The Silesian (6th corps), particularly the inhabitant of Upper Silesia, has some of the faults of the Pole, but is a poorer creature, badly fed, and somewhat deficient in stamina. The Westphalian, 7th corps, has considerable affinity with ourselves, slow and solid, a large feeder, apt to grumble about his food, especially if not regularly supplied, but a sturdy hardy soldier. The Rhinelander (8th corps) has more affinity with the French, volatile, and rather inclined to be lazy, fond of basking in the sun, and inclined to creep away from work and soak sour wine. The Pommeranian (2nd corps) is a good humoured, heavy, but very solid and trustworthy soldier, rather given to beer, and somewhat sluggish. The

corps in which there is the least crime is the 4th, the Saxon Corps, recruited from a docile and tractable race. But there is really very little crime in the Prussian army, for which reason may without difficulty be found.

The service is short. The men are of the least criminal age; they are less flighty than boys, and have not acquired the vices of old soldiers, or rather of made soldiers, who have not steadied down. They have very little pay, and they are pretty fully occupied, and so kept out of mischief. Last of all, from the hour of entry into the service they are impressed with the feeling that they belong to an honourable caste which to disgrace would be a shame. There is no army,—no profession in the world,—where esprit de corps plays so high a part as in the Prussian army.

Question 4.—Results of punishment on discipline.

I am assured that the present classification of punishments works well. There is much in the minute adaptation of penalties to offences (I beg to refer to my Despatch No. 10 of the 23rd February 1867,) which may appear cumbrous and devoid of simplicity; but the results are said to be good, not only in ensuring adequate punishment, but as deterrent of crime. There is, however, a great lack of statistical information on this subject, arising partly from an aversion to publicity. A bad man is, however, *invariably* got rid of. Dismissal from the army is a disgrace which clings to a man for life, and from the shortness of the service and other causes which I have mentioned in my answer to No. 3, the gaol bird of the English is very scarce in the Prussian army. In the first place, a really bad character is not taken for a soldier; in the next place, he is set upon by all classes, comrades as well as superiors, if he crops up at a later period; and in the third place, he can never, under the present system of raising the levies from lists carefully prepared in the country districts, return to the service under any circumstances whatever, if once expelled. Men who capitulate (re-engage) after the obligatory three years, generally serve with a view to future civil employment, which is at once a guarantee for good conduct. As regards the minor punishments, their efficiency depends very much on the character and discretion of the person by whom they are administered; but the system is a good one, and the officers in command are for the most part well and carefully selected. If a regiment goes to the bad, the commanding officer is removed. On him rests the fault, and on him the punishment falls.

Question 5.—Punishments to which non-commissioned officers and privates are subjected by commanding officers without trial before a military tribunal.

I find it not only more convenient but indeed almost necessary to answer these two questions together. All persons belonging or attached to an army, officers, soldiers, and military officials, and in time of war, all camp followers and prisoners of war, are subject to the infliction of summary minor punishments for all offences against military discipline and regulation, for which the code of military law (Strufgesetzbuch) provides no punishment, and for such of these offences as appear deserving of a less severe punishment than the minimum period of confinement awarded by courts-martial.

The punishments are as follows:—

Of officers; reprimand, or arrest in quarters not exceeding 14 days.

Question 6.—Limits of descretionary power of commanding officers as to such punishments.

The reprimands are either:—

a. Simple, without witnesses or in the presence of a superior officer.

b. Formal, before the assembled officers.

c. Severe, by means of the order book, with addition of the grounds for the reprimand.

Of non-commissioned officers; reprimand before the assembled officers or non-commissioned officers of the company, squadron, or battery.

Extra guards or orderly duties:—

Confinement to barracks or quarters, not exceeding four weeks;

Light arrest not exceeding the same period;

Middle arrest not exceeding three weeks;

Non-commissioned officers with the sword knot are exempted from the *summary* award of middle arrest.

Of privates, including lance-corporals:—

Extra duties, guard, fatigue, orderly barracks duty, or in the stables, clothing stores, or at the butts;

Parading at roll call in a particular order, in the cavalry mounted;

Being paid daily;

Confinement to barracks or quarters, not exceeding four weeks;

Light arrest not exceeding four weeks;

Middle arrest not exceeding three weeks;

Severe arrest not exceeding 14 days.

Reduction of lance-corporals.

Removal to a "Strafabtheilung" of an incorrigible on whom all other means of punishment have been tried without effect.

On the march or in camp the prohibition of the use of beer, tobacco, and of similar indulgences may be substituted for confinement to barracks or for light arrest; binding to a wall or tree for one hour daily for middle, and for three hours daily for severe arrest.

The power to award summary minor punishments is only delegated to officers holding commands, and is not contingent on the rank but on the charge, and therefore descends to those holding commands temporarily. Excepting in garrisons or in mixed commands, it is seldom exercised by officers holding a higher post than that of the command of a regiment.

An officer commanding a squadron, company, or battery can award—

Confinement to barracks or quarters, or light arrest not exceeding eight days, to non-commissioned officers or privates, middle arrest not exceeding five days; to non-commissioned officers without the sword knot, and privates, severe arrest, not exceeding three days to privates, but the award of this punishment must at once be reported to the commanding officer.

Commanders of battalions with head-quarters of a regiment can award in like manner 14 days, 10 days, seven days, and can inflict confinement to quarters on the officers of their battalion. The duration of this punishment must be fixed by the officer commanding the regiment.

Officers commanding regiments and independent battalions and officers of higher rank entrusted with the inferior military jurisdictions can award to officers,—

Severe reprimand;

Arrest in quarters for six days.

To the other classes—

The arrests and confinement above mentioned for four, three, and two weeks respectively.

They can also reduce lance-corporals and order the removal of incorrigible privates to a strafabtheilung.

Commanders of detached battalions, squadrons, companies, and batteries, as also all field officers or captains exercising a separate detached command, can award,—

Three days arrest in quarters to officers, having in other respects the same powers as officers commanding battalions at head-quarters.

A similar power is conferring on subalterns commanding detachments, with the exception that they are not empowered to punish an officer.

All these classes of officers can award extra duties, and simple or formal, but not severe reprimands.

The award of summary minor punishments by officers of higher rank than that of regimental commanding officer is usual only when the offence is committed—

Under their own eyes;

Against their express authority;

By soldiers of different corps under their command;

When the case is directly referred to them for adjudication; or

When the actual commanding officer fails to adjudicate.

These officers are empowered to award the following periods of arrest in quarters on officers, viz.:—

A general officer commanding a corps 14, a general commanding a division or the governor or commandant of a fortress of the first class 10, the commander of a brigade or of a fortress of any other class eight days' confinement to quarters.

GENERAL REMARKS.

Auditors.

As the Prussian system and organization so materially differs from those of the English army, I shall add a few remarks in elucidation of points arising in the foregoing report.

The auditor's department is a civil branch of the War Office, the members of which have been educated and have taken their degrees as lawyers. The auditor-general has the relative rank of major-general, and his bureau consists of five superior and seven inferior officials.

There are 13 corps and 90 divisional auditors, that is, 53 for divisions (where two generally are attached), and 27 in garrisons and governments.

Classes of Non-commissioned Officers.

The non-commissioned officers with the sword knot are—

a. Company squadron and battery serjeant-majors (feldwehel, wachtmeister).
b. Master gunners in the laboratories (oberfenerwerker).
c. Ensigns with the sword knot (portepéefähnriche).
d. Master gunners in the artizan companies of the artillery (obermeister).
e. The mounted couriers (feldjäger).

The non-commissioned officers without the sword knot are—

a. Laboratory serjeant (fenerwerker).
b. Serjeants and the quartermasters of cavalry and horse artillery.
c. Corporals (unterofficiere).
d. The military and civil gendarmes.
e. Bombardiers of artillery.

Coroner.

The duties of the coroner are undertaken by military courts when the death of a soldier requires investigation.

Confinement before Sentence.

Soldiers accused of theft, fraud, or desertion are to be placed in confinement before trial, but this is not generally required unless suspicion exists that the accused meditates flight from justice.

Repetition of the same offence.

The repetition of an offence *entails* an increase of punishment.

Extenuating circumstances.

Crime induced by the misconduct, indiscretion, illegal or overbearing conduct of a superior is so far condoned that "extenuating circumstances" are admitted in mitigation of the punishment, and the offending superior is liable to punishment.

BEAUCHAMP WALKER, Colonel,
Berlin, April 2, 1868. Military Attaché.

N.B.—It will be observed that I have not answered Question No. 7, no such punishment as deprivation of pay being known. B. W.

No. 5.

(*Translation.*)

REPORT on the CONSTITUTION and PRACTICE of MILITARY TRIBUNALS in ITALY.

I.—CONSTITUTION OF MILITARY TRIBUNALS IN ITALY.

The arrangements for military jurisdiction in Italy are as follows :—

(*a.*) There are permanent military tribunals established whose number may vary and does vary, according to circumstances, and are at present twelve in number throughout the kingdom.

These tribunals are composed of a colonel or lieut.-colonel as president, and five judges, two of which must be field officers and three captains. "Remplaçants" are named for each tribunal.

At these tribunals are tried soldiers, corporals, and non-commissioned officers (sott' uffiziali).

(*b.*) Special tribunals are appointed to try officers.

These are not permanent, but are made up and convoked when required in five fixed districts.

Their composition varies according to the rank of the offender, according to a scale which is based on the principle that as far as possible the judges shall be of superior rank to the accused. The members of a special court-martial are to be chosen by lot among the officers who happen to be in the territorial (military) division where the offence is committed.

(*c.*) Connected with every permanent court are an office of inquiry (istruzions), office of public prosecutor, a committee of inquiry, and a secretariat.

The office of inquiry consists in an officer-in-chief (istruttove), a captain or lieutenant, who may also be on half pay, and his assistants.

The office of the public prosecutor consists of a Government advocate and one or two junior counsel.

The secretariat, of a secretary and his substitutes. All these persons are civil functionaries, although appointed by and dependent on the Minister for War.

The committee of inquiry is composed of a field officer as president and two captains.

The action having been commenced, the representative of the public prosecutor makes his inquiries, and the committee of inquiry (a sort of grand jury) on examination of the facts alone, deliberate as to the nature of the offence. If a true Bill is found, the accused is sent before the court-martial, where he is tried publicly and verbally.

The secretary attends the audience and reads the sentence.

(*d.*) Permanent or special courts-martial are judges of facts and of law. Their sentences on the *facts* of a case are as much without appeal as those of a jury. In case of legal errors, however, or an irregular application of the law, or irregularity in the forms, their sentences are liable to be submitted to a superior law officer, who has authority to reverse them.

This superior legal authority is the supreme war tribunal, a mixed court composed of civil judges (councillors of state, presidents and councillors of the court of appeal) to the number of four, and military judges, three general officers, including the President.

Connected with this supreme war tribunal there is a secretary and a public officer represented by the Advocate-General and four substitutes, all civil functionaries. Their duty is to prepare, in a legal manner, their opinions as to the appeal, to be debated openly, demanding, as the case may be, or the rejection of the appeal, or the annulling of the sentence while sending the case to another tribunal.

Both accused and accuser can appeal against the sentence of a court-martial to the supreme tribunal within a given time.

(*e.*) The Advocate-General and the Director of the Public Military Ministry are the legal counsellors of the Ministers of War and Marine.

The administration of military justice at sea will receive a similar organization by a law, the project of which has been presented to the legislative chambers.

(*f.*) In the cases of concentration of troops for a camp for instruction, or any other reason, temporary courts-martial may be established at head-quarters on the footing already indicated, and the functions of a public prosecutor can be exercised by officers.

(*g.*) In time of war, and in places declared under martial law, the jurisdiction of the permanent tribunals ceases, and courts-martial are substituted for them.

At these courts there is no committee of inquiry (grand jury), but the act of accusation is compiled by the public prosecutor. Judgment is given with more expedition, but always after a previous debate and the hearing of the accused and his defender. There is no appeal from their sentences, which are carried out within 24 hours, except in the case of a reprieve ordered by the commander-in-chief to obtain the pardon of the condemned one.

(*h.*) Besides these ordinary courts-martial, commanders-in-chief can convoke extraordinary courts-martial (drum-head) to judge off-hand criminals caught in the commission of acts punishable by death, when it may be necessary in the interest of discipline, and where there is no court-martial already constituted. At such tribunals, composed of five judges and a president chosen by order of seniority, the charge, the judgment, and the execution of the sentence are carried out summarily and "*ad modum belli.*"

II.—NATURE OF THE PUNISHMENTS INFLICTED BY COURTS-MARTIAL.

The punishments awarded by courts-martial are of two sorts : military prison, military arrest, reduction of rank and dismissal from the service, are essentially military punishments. There are besides two, taken from the Common Law Code, *i.e.*, ordinary imprisonment, and hard labour. With regard to the punishment of death pro-

nounced by courts-martial, it is always carried into effect by being shot.

For crimes of a strictly military nature, such as desertion and insubordination, the punishments are military prison, military confinement, and death by being shot *in front*. For crimes of a dishonouring nature, and of a certain gravity, such as prevarication, treason, insubordination, with premeditated treason, or with homicide, the above-named punishments are awarded, and death by being shot in the *back*.

The punishment of military prison is divided into four categories, between a minimum of two months and a maximum of one year. That of solitary confinement (reclusione ?) where the minimum is one year and the maximum 20 years, is divided into seven classes.

The punishments are always in relation to the crime, and no distinction is made as to the rank of the accused. The private and the general are equal before a court-martial, in the same way that all citizens are equal before civil tribunals.

There are accessory circumstances to be noticed in connexion with the principal punishments, which according to the nature of the crime either follow necessarily on the execution of the sentence, or are expressly pronounced by the court. Such are, privation of rank for non-commissioned officers, and resignation of their commission for officers (but allowed to sell); in the second place, dismissal from the service for officers, and degradation for all soldiers. The two latter render the culprit unworthy of belonging to the army.

Extenuating circumstances when found have the effect of diminishing the sentence by one class. For all crimes committed in *time of war* the punishment is increased by one grade.

It is forbidden to apply the minimum of punishment to second convictions. In cases of twice deserting, the punishment is increased by one grade.

In applying to individual cases the punishments sanctioned by the code the court have power to range between the minimum and maximum, and in this way are enabled to take into account and allow for any exceptional circumstances which the individual cases may offer.

III.—Prevalence of Drunkenness.

A state of intoxication at the moment of commission of the crime does not affect a diminution in the punishments for revolt, mutiny, and insubordination. No other prescription on this subject is to be found in the penal code.

IV.—Results of Punishments in Discipline.

For accurate information on this point, it is necessary to turn to statistics. The recent organisation and metamorphose of a Sardinian into an Italian army render as yet this information of little value.

V.—Punishments to which Non-commissioned Officers and Privates are subjected by Commanding Officers without a Trial before a Military tribunal.

For Non-commissioned Officers.

1. Suspension of leave to go out at night for 1—60 pays.
2. Confinement to barracks for —60 days,
3. Room of discipline, simple, for 1—30 days.
4. Room of strict discipline, for 1—30 days.
5. Suspension of rank for 1—3 months.
6. Abolition of rank.

For Privates.

1. Turn outs in number not exceeding five with arms and baggage.
2. Extra turns of fatigue parties not exceeding five.
3. Punishment drill from 1—10 days.
4. Confinement to quarters from 1—90 days.
5. Arrest (simple) from 1—90 days if in a room and from 1—5 if in a cell.
6. Arrest (strict) from 5—30 if in a room, from 4—20 in a cell.
7. Short irons from 1—4 days.
8. Crooked irons from 1—3 days.

N.B. The irons are lengthened two hours out of every six, and taken off at night.

VI.—Limit of Discretionary Power of Officers, as follows:—

For Non-commissioned Officers.

Punishments Nos. 1 and 2 may be inflicted by any officer, and the duration of the punishment can be fixed by the officer inflicting it, if of the rank of captain or above, and if not, by the captain commanding the company to which the non-commissioned officer belongs.

Punishment No. 3 can be inflicted by any officer, but the duration of it is fixed as above by the commanding officer of the troop or by the officer who inflicts it if superior to that in rank.

The non-commissioned officer who undergoes this punishment will attend at all lectures and instructions and will remain shut up at other times in a room on purpose.

Punishment No. 4 can only be inflicted by the commanding officer or one superior to him in rank. If the latter does not fix the duration of the punishment, it is the duty of the former to do so. The non-commissioned officer is shut up in a separate room and does no service at all. The non-commissioned officer undergoing any of the first four punishments receives the rations belonging to that grade.

Punishment No. 5, by the commanding officer who fixes its duration. The non-commissioned officer is in this case transferred to another company by the order of the general commanding the division. This lapse of time counts neither for seniority nor promotion. When it has expired, the non-commissioned officer returns to his own company,

Punishment No. 6 is only inflicted after sentence pronounced by a Committee of Discipline convoked by the commanding officer, and composed of a major as president, two captains, two lieutenants and one adjutant-major, who acts as secretary. The majority decide by ayes and noes on the question put by the president as to whether the culprit shall lose his rank. In cases of equality the general commanding the division decides. This officer can also inflict the lesser punishment in case of a favourable verdict, and determine the company to which the culprit shall temporarily be transferred.

For Soldiers (Privates).

Arrest and light punishments are inflicted in the same manner as Nos. 1 and 2 on non-commissioned officers.

Simple and strict imprisonment is inflicted by any officer, and the duration of it fixed by the commanding officer if the officer who inflicts it be not superior to him in rank.

Irons are only awarded by the commanding officer and the duration of it fixed by him when not inflicted by an officer superior to him in rank, who then fixes the duration of the punishment himself.

VII.—Deprivation of Pay, &c.

Deprivation of pay is not a punishment that can be inflicted by a court-martial. It is a necessary consequence of the suspension of office which an officer may incur as a matter of discipline. This is done by a Royal Decree, proposed by the Minister of War, which proposition is either backed by a Committee of Discipline, or is made by the Minister himself with a statement of facts and on his exclusive responsibility. In this second case the officer can demand a court-martial, of which the verdict, if favourable, annuls the suspension of his office.

The faults which are the object of similar treatment should not be serious enough to provoke penal procedure or very strict disciplinary measures, as the revocation of a charge, abolition of rank and office, which an officer may incur, but which are never pronounced but by the previous finding of a Disciplinary Council.

No. 6.

Letter on Military Law and the Practice of Courts-martial in France.

My Lord, Paris, April 1, 1868.

In compliance with Lord Stanley's Despatch No. 191, of the 23rd instant, I have the honour to forward herewith the French Military Code, which will show:—

1. The constitution of the French military tribunals.
2. The nature of their punishments.

With regard to question No. 3, I can state that drunkenness does not appear to be prevalent in the French army; the Bretons are more particularly addicted to it, but one can infer that it is not necessary to have recourse to severe punishments to check it, from the fact that a man is never confined for simple drunkenness, and if he can go quietly to his bed.

When drunkenness interferes with any duty of course it is a different thing.

It is very difficult to answer the 4th question,—results of punishments on discipline. If the system of punishments had not been considered effectual I suppose it would have been changed. Of course in framing either Articles of War or Regulations for the management of men, one can only lay down general principles, and a great deal must depend on the way in which they are carried out. I have every reason to believe that they are satisfied with the system of punishments.

I beg also to forward herewith the King's Regulations of the 2nd November 1833, which are still in force, and which from page 167 to page 192 will answer questions 5 and 6 as to the punishments to which non-commissioned officers and privates are subjected by commanding officers without trial, and also the limits of that discretionary power.

It appears strange to us that non-commissioned officers and even officers should be subjected to such minor punishments, and I am not sure that it works well here, but it has become so much part of the system that it would be difficult to change it, and they have also a very different class of officers and non-commissioned officers to deal with.

7. Deprivation of pay by military tribunals or otherwise, and for what offences?

There is no such thing as we understand it, but when a man is ordered a certain number of days' imprisonment, either by his commanding officer or by a General, he loses "*ipso facto*" for that time what is called his pocket money, which varies from one halfpenny a day in the line to fivepence in the imperial guard, and the sum of which he is thus mulcted is credited to the messing of the troop or company to which he belongs.

The gradation of punishments may be summed up as follows:—

When a soldier has been ordered all the imprisonment which can be inflicted at the discretion of his Colonel and the general officer commanding, two months by the latter, he may be sent before a regimental court of discipline, and be by them recommended to be drafted into a "compagnie de discipline." This course generally meets all the cases of habitual misconduct and neglect of duty.

When a man is convicted by a court-martial he is struck off the rolls of the regiment to which he belonged, he is sent to a military prison where he gets only the prison pay, and when released at the expiration of his sentence he is invariably sent to the light infantry battalions in Algeria, which are the refuge of all bad characters, and so that he may not taint his old comrades by going back into their ranks.

I have, &c.
W. Claremont, Colonel.

No. 7.

Correspondence.

Sir, Horse Guards, S.W., 6th March 1868.

The Field Marshal Commanding-in-Chief having had under his consideration the subject of the present mode of punishment for drunkenness in the army, desired that a committee of officers should be formed for the purpose of inquiring into the whole question and to offer any suggestions as to the best method of repressing the crime, bearing in view the recommendations which have been made by various general and other officers for the adoption of a system of fines in lieu of trial by courts-martial, I have it in command to transmit for the perusal of the Secretary of State for War the proceedings of the committee.

His Royal Highness concurs in the opinion and recommendation of the committee, and considers it most desirable that the same should be carried out with as little delay as possible.

To be enabled to do this, it will be necessary that such alterations should be made in the forthcoming Articles of War as will empower commanding officers to inflict the fines as recommended.

The documents having been submitted to the Judge Advocate-General, he has furnished His Royal Highness with the alterations which he considers will be necessary, and which, with Mr. Mowbray's letter, are herewith also transmitted.

The Field Marshal Commanding-in-Chief considers it very desirable that the proposed system should come into speedy operation, and His Royal Highness trusts, should the Secretary of State see no objection, that directions may be given for the alterations to be made in the forthcoming edition of the Mutiny Act and Articles of War.

You will be pleased to return the inclosures.

I have, &c.
(Signed) W. Paulet, A.G.

The Under Secretary of State for War,
War Office.

No. 95.

Judge Advocate-General's Office,
My Lord, 5th March 1868.

I have the honour to acknowledge the receipt of your Lordship's letter of the 4th instant, inclosing the report (herewith returned) of the committee of officers appointed to inquire into the subject of drunkenness in the army, and requesting me to prepare the alterations in the Articles of War necessary to carry out their recommendations.

2. In reply I have the honour to forward to your Lordship for the consideration of the Field Marshal Commanding-in-Chief, copy of Articles of War 76, 77, 78, altered in red ink in a manner which will, I think, effect the object desired.

I have, &c.
(Signed) J. R. Mowbray.

The Adjutant-General,
&c. &c.

"Drunkenness.

"Art. 76.

"Any officer who shall be drunk when on or for duty shall on conviction thereof before a general court-martial be cashiered; any soldier who shall be drunk when on or for duty shall on conviction thereof before any court-martial be liable to such punishments as shall accord with the provisions of the Mutiny Act and with the usage of Our service."

"Art. 77.

"Any soldier who shall within 365 days have been drunk four times, or twice drunk when on or for duty, may be charged with habitual drunkenness, and on conviction thereof before a general or district court-martial shall be liable to such punishment as shall accord with the provisions of the Mutiny Act and with

the usage of Our service. Any soldier who within 168 days after a conviction for habitual drunkenness shall be drunk twice, or shall be drunk once when on or for duty, may be again charged with habitual drunkenness and be tried and punished accordingly. In any charge of habitual drunkenness the place and date of the last instance of drunkenness shall be specified, and also the number of the previous instances of drunkenness imputed, and the period within which they occurred, but the dates and places of such previous instances shall not be specified. Such previous instances shall be proved by reference to the defaulter's books, or by satisfactory evidence of the entries therein. No instance of drunkenness which has on a former occasion been adduced to prove a charge of habitual drunkenness, of which a soldier has been convicted, is again to be adduced against him in support of a similar charge. When a former conviction of habitual drunkenness is stated in any charge of habitual drunkenness, such conviction shall be proved by the production either of the court-martial book or of the regimental or company's defaulter's book, containing the entry thereof, or if such books cannot be produced, then by a copy of the entry in one or other of them duly authenticated. If the instance of drunkenness which occurred last should be proved, but the offence of habitual drunkenness should not be proved, the court may acquit the prisoner upon the charge for habitual drunkenness, and find him guilty upon the single instance of drunkenness, and sentence him accordingly."

"Art. 78.

"Subject to appeal to a court-martial, any soldier shall be liable by award of his commanding officer to suffer a fine not exceeding 10*s.* for any act of drunkenness, such fine or fines to be levied by stoppages from the soldier's daily pay not exceeding in the aggregate at any one time 4*d.* a day."

SIR, 13th March 1868.

I AM directed by Secretary Sir J. J. Pakington to acknowledge the receipt of your letter of the 6th instant, with its inclosed report of proceedings of a committee of officers appointed to inquire into the question of the present mode of punishment for drunkenness in the army, and conveying the suggestion of the Field Marshal Commanding-in-Chief, that the necessary alterations should be made in the forthcoming Mutiny Act and Articles of War, with a view to carry out the recommendations made by the committee.

In reply I am to request that you will state to His Royal Highness that, looking to the advanced stage of the draft of the new Act, Sir J. Pakington is of opinion that it is too late to make so important an alteration as that suggested, which would require some consideration before being finally decided, and furthermore, Sir J. Pakington is most reluctant to make so great a change at the moment Her Majesty, upon his advice, had appointed a Commission to inquire into the subject.

Should, however, Her Majesty see no objection to such a course, Sir J. Pakington would propose to lay your letter, containing the views of His Royal Highness, and the proceedings of the committee, before the Royal Commission for their consideration.

The Adjutant-General. E. LUGARD.

SIR, Horse Guards, S.W., 18th March 1868.

BY desire of the Field Marshal Commanding-in-Chief, I have the honour to acknowledge the receipt of your letter of the 13th instant, No. 39,035/3, and to acquaint you that His Royal Highness sees no objection to the report of the proceedings of the committee on the mode of punishment for drunkenness in the army being laid before the Royal Commission on courts-martial.

I have, &c.

(Signed) W. PAULET, A.G.

The Under Secretary of State,
War Office, Pall Mall.

Committee authorized on the 23rd January 1868.

PROCEEDINGS of a COMMITTEE of OFFICERS appointed by HIS ROYAL HIGHNESS THE FIELD MARSHAL COMMANDING-IN-CHIEF to inquire into the subject of DRUNKENNESS IN THE ARMY, and the most efficient mode of repressing it.

President.

Major-General the Honourable JAMES LINDSAY.

Members.

Colonel C. R. EGERTON, Deputy Adjutant-General.
Colonel E. A. WHITMORE, Assistant Adjutant-General.

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1. The documents enumerated in the schedule annexed marked A. were laid before the Committee.

2. The Committee next proceeded to take evidence on the subject, the substance of which is also attached to the proceedings.

3. The Committee having taken into their consideration the documentary and other evidence before them, the former expressing the views of general and commanding officers (comprising many whose names carry much authority and weight in the service), and the latter, more particularly of non-commissioned officers, whose experience might be supposed to have made them conversant with the subject, and with the feelings of the soldiers in regard to it, find that though there is difference of opinion on some points, and in details, there is a remarkable unanimity with respect to two important positions :—

1st. In condemning the existing law and regulations for repressing drunkenness.

2nd. In suggesting that the best alternative would be the extension of the powers of commanding officers to admit of the establishment of a system of fines.

4. With respect to the first of these positions the Committee call attention to the return annexed marked B.

It will be seen by this document that in the year 1866 no less than 9,736 trials took place for habitual drunkenness. The returns for 1867 have not all been received, but there is reason to fear that the numbers will not be found to have much decreased.

Return C. shows the approximate number to be 9,438.

5. The Committee believe that these constant trials and frequent imprisonments have not been effective in repressing drunkenness.

On the other hand, that they tend to demoralize the men who are subjected to them.

Tried by court-martial loses thereby much of its moral effect. It is not considered a disgrace by the other men or feared by young soldiers, while the services of a large per-centage on the strength of the army are lost thereby, and the duty thrown on the well-behaved men.

6. Under these considerations the Committee concur in the view expressed in the second position, and submit for the consideration of His Royal Highness the Field Marshal Commanding-in-Chief a series of recommendations marked D., defining the principles upon which they consider a system of fines may be introduced and the details carried out.

7. There are, no doubt, many soldiers in the army who will not be deterred by any system from getting drunk, and the Committee strongly advise the discharge of all such incorrigibles, whenever it can be certified by the surgeon of the regiment that from physical or other causes they cannot be re-enlisted.

8. As regards the young soldiers and better disposed men the Committee are sanguine that the system proposed would have a good effect and must tend to raise the morale of the army.

9. The Committee recommend that the power of trial for habitual drunkenness on the fourth time, as provided for in the 78th Article of War, should be retained until it is ascertained that the system of fines (should it be approved of) is working satisfactorily. The Article might then be modified.

10. It would, the Committee believe, be essential to the success of any system of fines that the sums obtained should be formed into a separate fund, with the concurrence of the Secretary of State for War, to be applied (under his directions) towards increasing the amount voted for rewards to the well-conducted, or to other objects for the general improvement of the soldier's condition: as for instance the establishment of workshops, lighting of barracks, to a later hour than at present allowed, &c. The scheme might otherwise

be received with suspicion, and considered a means of taking away the increase of pay lately granted to the army.

The fund should be applied generally and not regimentally, otherwise the corps having most drunkenness would benefit to the greatest extent.

JAMES LINDSAY,
Major-General.
C. R. EGERTON,
Deputy Adjutant-General.
E. A. WHITMORE,
Assistant Adjutant-General.

Horse Guards,
26th February 1868.

A.

SCHEDULE OF REPORTS, &c., FOR THE CONSIDERATION OF THE COMMITTEE ON HABITUAL DRUNKENNESS IN THE ARMY.

No.
1. Instructions from the Adjutant-General for assembling the board to consist of—
   Major-General the Honourable J. Lindsay, *President.*
   Colonel C. R. Egerton, D.A.G. } Members.
   Colonel E. A. Whitmore, A.A.G. }
2.
3. Letter from Commander-in-Chief in India, suggesting improvements in the law.
4. Observations by the Judge Advocate-General on Sir W. Mansfield's proposals.
5. Report from Lieutenant-General Sir J. Yorke Scarlett, conveying his own opinion and that of the following officers on the suggestions of Sir W. Mansfield and the Judge Advocate-General, viz.:—
   Letter from Major-General Hodge, C.B.
   ,, Major-General Renny.
   ,, Major-General Campbell, C.B.
   Memorandum from Brigadier-General Sir A. Horsford, K.C.B.
   Letter from Major and Brevet-Colonel Graham, Commanding 1/18th Foot.
   Letter from Colonel Wyatt, Commanding 65th Regiment.
6. Report from Lieutenant-General Sir Patrick Grant, G.C.B., Governor and Commander-in-Chief, Malta.
7. Letter from Major-General the Honourable J. Lindsay, from Canada.
8.
9. Evidence of the following officers and non-commissioned officers, viz.:—
   Major Welman, 1st Depôt Battalion.
   Quartermaster Smith, Scots Fusilier Guards.
   Colour-serjeant Charles, 2/1st Foot.
   ,, Dolan, 2/17th Foot.
   Serjeant-major McBlair, Scots Fusilier Guards.
   ,, Haylock, Grenadier Guards.
   ,, Sampson, Coldstream Guards.
10. Reports from the following non-commissioned officers, viz.:—
   Serjeant-major Watts, 1st Depôt Battalion.
   ,, Swain, 1/1st Foot.
   Colour-serjeant Hannon, 109th Foot.
   ,, McNally, 2/15th Foot.

B.—11. Return furnished by the Adjutant-General, showing the Number of Trials for Habitual Drunkenness in 1864 and 1866.

C.—12. Return showing the approximate Number of Trials for Habitual Drunkenness in the Army during 1867.

13. Paper by Major-General Lawrence, C.B.
14. Remarks by Lieutenant-General Sir P. Douglas.
15.

No. 1.

INSTRUCTIONS from the ADJUTANT-GENERAL.

1. The existing regulations with respect to the crime of drunkenness have not been successful in repressing that crime.

2. The number of courts-martial has been so excessive that this last resort in maintaining discipline is losing its effect, while the services of a very large per-centage of the army are lost by the imprisonment for long terms for habitual drunkenness, and the duty is thrown on the well-conducted men.

3. The concurrent opinions of Sir William Mansfield, Sir Patrick Grant, and many other general officers commanding divisions and stations, and of officers commanding regiments, all tend to condemn the existing state of the law and regulations on the subject of drunkenness, and point to a system of fines as the most likely mode of repressing the crime.

4. It is recommended that a committee be assembled without delay to consider the question in order that any alterations suggested and approved of may be provided for in the Mutiny Act, 1868–9.

(3.)

COURTS-MARTIAL.—HABITUAL DRUNKENNESS.

No. 32.

Head Quarters, Calcutta,
21st March 1867.

MY LORD,

I HAVE the honour once more to invite the attention of His Royal Highness the Field Marshal Commanding-in-Chief to the expediency of a reform I have previously advocated, I allude to the wisdom of making some change in the law with regard to habitual drunkenness.

2. According to orders received last year it is now rendered imperative to act up to the strict letter of the Articles of War, and try every soldier who has been drunk four times in a twelvemonth, or twice in six months after a previous conviction of habitual drunkenness. The consequence has been an immense increase in the number of courts-martial, and therefore in the amount of days of imprisonment shown by the courts-martial returns.

3. I have noticed a tendency in commanding officers and regimental courts-martial to inflict the utmost amount of imprisonment according to the power of such a court in addition to the deprivation of a penny a day.

4. I have checked this tendency in my general orders, nevertheless the number of regimental courts-martial is prodigious, and the consequent confinement of soldiers great in proportion.

5. The attention of the recruiting commission was, I believe, directed to the causes of the alleged unpopularity of Her Majesty's military service among the classes from which the private soldiers are recruited.

6. I venture to offer my humble testimony with regard to a cause which does not seem to have attracted the attention of the commission, I allude to the liability of the soldier to be put in gaol for more or less lengthened periods on account of military offences which, in the eyes of the civil population, attach no criminality to the offender.

7. With respect to offences of violence and insubordination, such reasoning has of course no application, but it does appear to me to have considerable force in the case of drunkenness, which in the population at large is considered as mere disorder, and punished as such by fine.

8. I would submit that the real object of the articles affecting habitual drunkenness is to take away from the soldier the means of future drunkenness, and not to break his spirit by imprisonment. Yet it can hardly be doubted that many young soldiers whose only offence has been drunkenness must have become worse in character and inclined to the commission of positive crimes when they have undergone an imprisonment of 30 or 42 days with all the disgrace attached to a committal to prison.

9. I would, therefore, once more venture to suggest to His Royal Highness that in the case of simple acts of drunkenness it might be well to follow the plan adopted in civil life, and to apply a fine only for such offences.

10. Thus, after condoning a first act of drunkenness, I would give commanding officers power to take away 1*d.* a day for periods ranging from 30 days to six months, *i.e.*, 30 days for a second offence, three months for a third offence within 12 months, and six months for a fourth offence.

11. I would not only do away with all regimental courts-martial on account of habitual drunkenness, but I would also abolish defaulter's drill and confinement to barracks on such account, provided that when acts of drunkenness are accompanied by other crimes, the latter be dealt with as heretofore.

12. In this manner probably half the courts-martial which now sit would be saved, and a great deal of punishment, which according to my experience has rarely produced practical results of amendment, would be avoided.

13. The power given to commanding officers would, in

fact, be analogous to that which they now exercise in the case of men drawing good-conduct pay.

14. It has always appeared to me to be an anomaly that the power which is granted to a commanding office over the good-conduct pay of a good soldier is withheld in the case of the daily pay of the bad one.

15. The juncture for such a reform as that I have ventured to propose would seem to be appropriate, if the announcement be true that Her Majesty's government propose to add to the daily pay of the soldier.

16. It would of course be necessary to continue to reduce non-commissioned officers for drunkenness by court-martial, it being clear that the offence of drunkenness in a non-commissioned officer is, with regard to his position, of a far more heinous character than it is in the private soldier.

17. In conclusion, I would add that if the suggestion be adopted the deprivation of a penny a day on account of drunkenness for any period, however brief, should constitute an entry in the regimental defaulter's book.

Three such entries should have the present effect of a court-martial in barring the offender from good-conduct medals, gratuities, and pensions.

18. I have frequently talked over the plan above sketched with regimental commanding officers, and almost without exception I have found them to admit that what is here proposed would be a great means of discipline and also satisfaction.

19. I have myself held these views since I commanded my regiment, the deteriorating effect of imprisonment on many young soldiers is painfully obvious.

20. It is also seen but too frequently that when a man is released from prison or after a long confinement to barracks as a defaulter, his first impulse in his newly acquired freedom is to rush to the beershop or wine house and commit himself to new debauchery.

21. I would, therefore, again submit with all respect to His Royal Highness, that the remedy lies in mulcting the drunkards in the means of drunkenness and not in awarding other punishments which are the proper meed of active crime.

I have, &c.
(Signed) W. N. Mansfield,
Commander-in-Chief
in India.

To the Adjutant-General
of the Forces,
Horse Guards, London.

(4.)

No. 169.

Judge Advocate-General's Office,
7th May 1867.

Sir,

1. I have the honour to acknowledge the receipt of your letter of the 2nd inst., inclosing a letter (herewith returned) of Sir W. Mansfield, relating to the punishment of habitual drunkenness, and requesting my observations thereon. In reply I beg to submit the following observations for the information of His Royal Highness the Field Marshal Commanding-in-Chief.

2. It may be well to begin by stating the present law upon the subject.

3. There is no appointed punishment for simple drunkenness. The first offence is probably generally overlooked. For the second and third offences the commanding officer awards a minor punishment, generally defaulter's drill or confinement to barracks. Upon the commission of the fourth offence the soldier must be tried by court-martial. He is usually deprived of his pay for 168 days, and to imprisonment, which is seldom less than 42 days.

4. To this system Sir William Mansfield strongly objects, chiefly upon the ground that many young soldiers are thus subjected to imprisonment and are greatly injured thereby.

5. Sir William Mansfield proposes to abolish the punishment of confinement to barracks and defaulter's drill for simple drunkenness, and to dispense with trial by court-martial on the commission of the fourth offence; and in lieu he suggests that the commanding officer should for offences of simple drunkenness have power to deprive the soldier of 1*d.* a day of his daily pay for periods ranging from 30 days to six months, viz.:—

30 days for a second offence.
3 months for a third offence (within 12 months).
6 months for a fourth offence.

He also proposes that every such punishment of deprivation of pay should constitute an entry in the defaulter's book, and affect the offender's right to good-conduct pay and pension.

6. Drunkenness on duty, or drunkenness with violence or insubordination, Sir W. Mansfield would treat as at present, viz.: as a crime triable by court-martial, and punishable by imprisonment; the former also with forfeitures of pay. He does not state, but it may be conjectured that he would desire any such offence to be counted as an "instance," enabling a commanding officer to visit the next instance with a heavier forfeiture.

7. I gather from the 11th paragraph of Sir William Mansfield's letter that he would reserve trial by district court-martial for a fifth or subsequent instance of simple drunkenness, as at present.

8. I have considerable mistrust of my own competency in entering upon a consideration of the policy of the proposed change, as the question appears to me to require special military experience. I can only offer a few general observations, showing why I feel disposed to concur in the change advocated by Sir W. Mansfield.

9. It cannot be doubted that drunkenness is a vice which is exceedingly common in the army, and is the cause of a very large proportion of military crimes. On the other hand it must be admitted that it is desirable to reduce imprisonment in the army to the minimum necessary for the preservation of discipline. The questions then appear to me to be—

(1.) Whether drunkenness is effectually restrained by the present system of punishment for the fourth offence.

(2.) Whether the system of forfeiture of pay recommended by Sir W. Mansfield, would be sufficient check upon the habit of drinking in its early stage.

(3.) Whether, if the system of immediate forfeitures were less effectual in such repression than the fear of imprisonment which avails the fourth offence; this defect would be compensated by the saving the soldier from the contamination of prison.

10. My experience in this office would lead me to think that the fear of imprisonment for habitual drunkenness is not successful in repressing that offence. Habitual drunkenness is an offence which brings many men to trial; but above all it is an offence which once committed by a soldier, is often repeated by him again and again. My conclusion would therefore be that it is of the highest importance to have a mode of punishment which tends to counteract the habit of drinking in its early stages. The proposed system of forfeitures would have this advantage, and it would limit the power of the soldier to obtain liquor. If such forfeitures prove ineffectual, imprisonment may, and probably ought to be tried, but if that also proves to be vain, I think then that the offender should be regarded as incurable, and be got rid of accordingly. I would therefore venture to suggest for consideration as supplementary to Sir W. Mansfield's suggestion that the same power should be given to district courts-martial to discharge offenders for habitual drunkenness, which they now hold for desertion and disgraceful conduct.

I have, &c.
(Signed) J. R. Mowbray.

Colonel Whitmore,
&c. &c.

(5.)

My Lord,

Aldershot, 6th June 1867.

In returning the letters of General Sir William Mansfield and the Judge Advocate-General, I forward the opinions of the Brigadier Generals and others under my command.

It will be perceived that, universally, they agree with the proposal to inflict fines in lieu of imprisonment of any great duration, and to cancel the order for bringing a man to trial invariably for the fourth offence committed within 12 months.

I confess I am not an advocate for long imprisonments for drunkenness or for any other crime in military life. Having, however, as long an experience of the army as most officers now employed, I am not prepared to say that drunkenness has not diminished considerably since the punishments now in use have been instituted; and it would be rash to say now that they are of no use.

No doubt a general improvement during the period has taken place in the upper ranks of society, which has in some degree affected the lower, and especially the army, who are brought more under the influence and example of their superiors than are the same class of society in civil life.

The improvement, therefore, which has taken place may arise from more than one cause; and perhaps it may be presumed that less harsh means may be brought to affect men's minds than formerly. I think it might be well worth trial, without suddenly and at once abrogating the present punishments, whether the apparently milder punishment of fines without imprisonment might not restrain men from committing acts of drunkenness. Should the system fail heavier punishments might still be resorted to.

I would propose that, as is usually the case now, the first offence should be met by admonishment; the second by a fine of 2*s.* 6*d.*; the third by a fine of 5*s.*; the fourth by a fine of 7*s.*; the fifth by imprisonment with hard labour for seven days and fine of 7*s.*; the sixth by court-martial and imprisonment to the extent of 28 days. But should these offences occur at long intervals, and the general conduct and character of the offender be good, I should leave it to the commanding officer's discretion to inflict the lesser fine and omit any imprisonment.

These fines, however, can at present only be inflicted by courts-martial under special clauses of the Mutiny Act and Articles of War, which it would be necessary to alter to enable a commanding officer to inflict them; and it is doubtful whether in cases of drunkenness, unless proved on oath, it would be desirable to interfere with the soldier's pay, of which he is most tenacious, and it might give rise to many complaints at half-yearly inspections. In civil life such fines are never inflicted unless the act is sworn to by the informers.

After all what is to be done when these fines and short imprisonments have failed but to resort to the district court-martial, and sentence the confirmed drunkard to be discharged, with some mark to prevent re-enlistment.

Men who have drank to that excess that their strength of body and mind have been seriously damaged would be no loss to the service; but as there are many men prone to drink in barracks and camp who are capital soldiers on service, whom, looking to the expense and difficulty of recruiting, one would scarcely wish to part with.

If, then, the powers of commanding officers, as pointed out by Sir William Mansfield, are given by law, they should be given in addition to existing laws and regulations on the subject, only not making it compulsory to try the fourth offence, but always to inflict some pecuniary fine for each offence.

I have, &c.
(Signed) J. Yorke Scarlett,
Lieut.-General commanding Division.

The Adjutant-General
to the Forces.

Cavalry Brigade Office, Aldershot,
Sir, 19th May 1867.

I have the honour to return to you the letters of General Sir William Mansfield, and of the Judge Advocate-General, on the subject of punishment for habitual drunkenness.

I do not look upon drunkenness in a soldier as a trivial offence; it is the source of nearly every crime for which he is liable to be punished. Nevertheless I have always considered that making it imperative on a commanding officer to bring to trial every man who has been four times drunk within 12 months is unnecessary; especially, as Sir William Mansfield observes, the punishment is often severe, and consigns to gaol young men to whom the imprisonment is fraught with loss of character and of self-respect.

The granting power to stop pay to a limited extent is a good measure, but I would not entrust this power to an officer in charge of a detachment; the infliction should rest entirely in the hands of the officer in immediate command of the regiment, consequent on the report of the officer commanding the detachment.

I have always considered that consigning men to long imprisonment is inflicting punishment on the good as well as on the bad soldier. In cavalry regiments the stable duties must be carried out, and the work of every man who is absent therefrom falls on his comrades; whereas the deprivation of a drunkard's pay is merely taking from him the means of gratifying his own indulgence.

I cannot ascertain that the fear of being tried by court-martial for the fourth offence of drunkenness has any tendency to stop the offence; but rather that it induces to absence without leave, to prevent the charge of "drunk" being placed against a man's name in the defaulter's book. It is impossible to say whether the forfeiture of pay will prove a check to drinking, but I consider that Sir William Mansfield's proposition is worth a trial, and may be attended with much good.

The suggestion of the Judge Advocate-General respecting the discharge of confirmed drunkards will prove the best method of punishing them, and on home service can be easily had recourse to.

I have, &c.
(Signed) Edw. C. Hodge,
Major-General commanding Cavalry Brigade.

Assistant Adjutant-General,
South Camp.

South Camp, Aldershot,
Sir, 21st May 1867.

In reply to the confidential letter dated Horse Guards, 15th instant, having reference to correspondence from Sir William Mansfield, the Commander-in-Chief in India, regarding the punishment for habitual drunkenness, with observations on the same from the Judge Advocate-General, I have the honour, for the information of the Lieutenant-General commanding, after attentive perusal of the above, to venture, as a late commanding officer of 12 years, as such to suggest as follows:—

1st. The suggestions by Sir William Mansfield, as to deprivation of pay by commanding officers in lieu of any other punishments, in my opinion would have a very beneficial effect, both as to depriving a soldier of the means to obtain drink, as also not subjecting him to the disgrace of public punishment or imprisonment, which no doubt have a demoralizing effect.

2nd. In any way in which a commanding officer deals with drunkenness (this being, without question, the source of the chief crimes in the army) I consider it should be an entry in the regimental defaulter's book.

3rd. I would suggest as follows:—

1. That drunkenness on duty should invariably be tried by court-martial.
2. That as non-commissioned officers are useless unless they are an example for good in every way, that cases of drunkenness on their part should also invariably be tried by court-martial.
3. That a first offence of drunkenness in a soldier should be simply "admonished;" the second to entail a deprivation of 1*d.* a day's pay for 30 days; every future offence ditto for 60 days, with liability, should a man prove incorrigible, to trial by regimental court-martial. The sentence in such a case to stand as at present, and 42 days' imprisonment in addition to the 60 days' forfeiture, should such fail. In trial by district court-martial, such court to have power, in addition to imprisonment, to sentence a soldier to be marked as worthless and incorrigible with the letters B.C., and further, to be discharged from the service with ignominy. But no court-martial to be resorted to till a soldier has at all events been four times drunk within 12 months.
4. That no soldier should be brought before his commanding officer till fully 48 hours after a confinement for drunkenness. He would then have entirely got rid of the effects of his debauch, and less likely to resort again to liquor to rid himself of the sickness and nausea attending it.

4th. My reason for limiting the deprivation of pay to 60 days is, that I consider any very lengthened stoppage has the effect of hardening a man and making him consider it hopeless to free himself, with a tendency to make him disgusted with the service, and thus to resort to drink to get quit of it; and from my own experience I think the certainty, not the extent, of punishment has the effect of deterring men from the commission of crime.

I have, &c.
(Signed) R. Kenny,
Major-General commanding 1st Brigade.

Assistant Adjutant-General,
Aldershot.

Sir, Aldershot, 27th May 1867.

I have the honour to state, for the information of His Royal Highness the Field Marshal Commanding-in-Chief, that having read and considered the sug-

gestions contained in the letter of the Commander-in-Chief in India, as well as the opinions offered by the Right Hon. the Judge Advocate-General with regard to the crime of drunkenness, I am of opinion that they are well worthy of trial. It is very evident that the present system of punishment for that offence has not had the desired effect.

I would, however, beg to suggest that instead of the offender being deprived of 1*d.* per diem for certain periods he should be fined certain sums of money at once, in the same manner as in civil life. Instead of 1*d.* a day for 30 days, I would at once fine him 2*s.* 6*d.*, and in lieu of 60 days 5*s.* He would thus be effectually deprived of the means of purchasing liquor for a time, which would hardly be the case by a stoppage of 1*d.* per diem. I would also (as in the case of absence without leave) give the power to commanding officers to award other punishments in addition to the fine. I most decidedly concur in the Judge Advocate's proposal to get rid of incorrigible drunkards.

I have, &c.
(Signed) G. Campbell,
Major-General commanding
2nd Infantry Brigade.

Lieut.-Gen. Hon. Sir J. Yorke Scarlett,
K.C.B., commanding the Camp,
&c. &c.

Sir, Aldershot, 24th May 1867.

I have the honour to submit the following remarks upon the documents forwarded to me confidentially this day for communication to the Major-General commanding.

1. The proposal that trial by regimental court-martial for habitual drunkenness should be done away with, and that up to a fourth offence within 12 months a commanding officer should have the power of stopping the offender's pay appears to me excellent.

2. Although I believe it would be advisable to do away with imprisonment for simple cases of drunkenness, even up to a fourth offence within a year, I should wish to retain the power of inflicting minor punishments, such as confinement to barracks with defaulters' drill, on such offenders, as tending to prevent them from getting drunk at the expense of their comrades, an evil which stoppages of pay would not counteract.

3. If we can afford to dispense with the services of confirmed habitual drunkards, it would appear advisable to get rid of them as proposed in the last paragraph of the Judge Advocate-General's letter.

I have, &c.
(Signed) L. Graham, Major,
Colonel 18th Foot.

The Major of Brigade, 2nd Brigade,
Aldershot.

Sir, Aldershot, 25th May 1867.

Adverting to a letter from the Adjutant-General, and enclosures from Sir W. Mansfield and the Judge Advocate-General, I would beg to state, in reference thereto, that—

1st. I have from constant observations, always been of opinion that habitual drunkards are *never* cured of that vice by repeated trials by courts-martial, having now in the 65th a man with 19 instances of H.D. convictions, another with seven, and on the embarkation of my regiment from New Zealand for home a man was discharged with 18 of the same!

2ndly. At the earlier stages of the development of this vice the summary stoppage of pay, bringing with it an entry in R.D.B., might have a very salutary effect by reducing the soldier's means without his liberty being in any way affected by imprisonment and confinement to barracks, and thereby effectually show him, without the additional annoyance of a wearying imprisonment or repeated drills, the folly of his conduct, and thus many a man whose only offences are simple acts of drunkenness might be saved the degradation of herding with other criminals whose offences have been of a deeper dye.

3rdly. I would therefore beg to advance an opinion that I consider this system of forfeitures of pay would be attended with beneficial results, but at the same time I would venture to suggest that it should no longer be compulsory on a commanding officer to bring *all* fourth instances of drunkenness to trial, provided they be not attended with other offences, and further, that all incurable cases of H.D. should on conviction be sentenced to be branded with B.C. and discharged with ignominy.

I have, &c.
(Signed) A. Wyatt,
Col. and Lieut.-Col. commanding
65th Regiment.

The Major of Brigade, 2nd Brigade,
Aldershot.

Memorandum.

North Camp, Aldershot, 30th May 1867.

In general terms I concur with the observations of General Sir W. R. Mansfield. I venture respectfully to suggest some modifications in the scheme laid down by him.

Until the sixth occasion within one year, or the third occasion within six months after a conviction of habitual drunkenness (and for both these crimes I should try an offender by a regimental court-martial), I should leave entirely to officers commanding regiments the punishment of men who may get drunk when off duty. I propose a scale of fines which will enable a commanding officer to discriminate between incorrigible offenders and those led away by temporary causes.

Thus, acts of drunkenness following in rapid succession would justly induce a larger fine than when the act is an isolated case. I should strengthen the power of a commanding officer by allowing him to punish by imprisonment to the maximum now allowed, viz., seven days, the fifth act of drunkenness or the second act after a conviction of habitual drunkenness. This punishment to be in addition to the fine.

Scale of Punishments for acts of drunkenness when the offender is off duty.

1st offence ever committed in the army unless aggravated by other acts - - -	Condonation.
2nd offence, unless, &c. - -	Fine of 1*d.* per diem from 5 to 30 days.
3rd offence, unless, &c. - -	Fine of 1*d.* per diem from 30 to 60 days.
4th offence, unless, &c. - -	Fine of 1*d.* per diem from 60 to 90 days.
5th offence, unless, &c. - -	From 2 to 7 days' imprisonment, and 1*d.* fine from 90 to 180 days.
6th offence - - - - -	To be punished by regimental court-martial.

An act of drunkenness occurring within six months after a conviction of habitual drunkenness to be punished as is the fourth offence in the above scale.

Each act of drunkenness I should count as "an instance" if the offender is tried later, in conformity with the suggestion in para. 6 of the Judge Advocate-General's letter.

When a soldier is drunk "on duty not under arms," or "when warned for duty," I should recommend that the full penalty of the fine be inflicted, and with imprisonment according to the degree of the offence (not to exceed seven days).

Stoppages to be made by carrying on the periods when the maximum of 3*d.* per diem has been attained. All acts of drunkenness when "on duty under arms," and all acts of "drunkenness accompanied by insubordination," should cause the offender to be tried by a regimental court-martial, or a higher court, except in the case of "a first offence" of drunkenness, when general officers should be empowered to authorize any of the minor punishments now proposed, on the application of the officer commanding the regiment.

I quite concur with the first part of para. 17 of Sir W. B. Mansfield's letter, but I should recommend a relaxation of the rule proposed in the latter part of the paragraph, and I recommend counting the fifth offence only as an act barring the offender from pensions, &c.

Should the suggestion contained in the latter part of para. 10 of the Judge Advocate-General's letter be carried out, I should recommend that an offender who has been twice tried by regimental court-martial should be tried by a district court-martial, which should always, when sentencing a man to be dismissed, order him to be marked with the letters B.C., or I should much prefer any other means which may prevent his again fraudulently obtaining the bounty.

It is worthy of consideration whether all these punishments now proposed should not carry with them, after the second offence, also confinement to barracks where such can be carried out.

A. Horsford, Brigadier-General.

The Assistant Adjutant-General.

(6.)

The Palace, Malta,
30th December 1867.

My Lords,

My attention having been called of late to the very great evils arising from the present mode of dealing with drunkenness in the army, I trust I may be permitted to submit to the notice of His Royal Highness the Field Marshal Commanding-in-Chief the following considerations, which appear to me to offer a better prospect of checking the vice so prevalent amongst soldiers than the system now in force has been found to do.

As regards Malta, the offence itself has, I am sorry to say, been greatly on the increase amongst the troops in garrison during the past year, in some measure owing to the late summer season having been an exceptionally unhealthy one, and the men having had recourse to spirituous liquors under the false impression that the practice was necessary to protect them against attacks of cholera; but principally owing to the large sums of money that have been paid over to the men on re-engaging and for arrears of extra pay, which sums for the most part have been expended in drink.

Strenuous efforts have been made by commanding officers to improve this state of things, and with a certain success; still the abatement that has taken place in the offence I attribute to the money having been expended rather than to any other deterring cause.

The additional pay recently granted to the soldiers is as far as concerns those who are habitual drunkards putting it in such men's power to drink all the more.

To counteract this, I am of opinion that the powers of commissioned officers should be correspondingly increased, and that they should be empowered to deal summarily with this offence by means of fines.

The present mode of dealing with drunkenness is characterized by the punishment of imprisonment quite as much as it is by stoppages of 1*d.* a day for certain periods.

I would advocate a system in which imprisonment should not form a part of the punishment for such offences; but which should depend instead on summary infliction of fines. According to a regular scale to affect the whole of a soldier's pay that shall remain to him after deducting charges for messing and washing and the residue of 1*d.* a day enjoined by present Articles of War.

I maintain that fines so inflicted would be more likely to impress upon the soldier the necessity of keeping sober, than by allowing the stoppages to be spread over lengthened periods.

As regards the inefficiency of imprisonment as a punishment for drunkenness, I need only point to the fact of our military prisons and garrison cells being filled for the most part with soldiers convicted of habitual drunkenness, who are recommitted again and again. Imprisonment has no terrors for them, and their services are totally lost, and their well-behaved comrades are burdened with their duties.

Following out the above suggestions more fully, Captain Goff, Brigade Major, has drawn up a report, which he has submitted to me, it is supported by carefully drawn up statements showing the disadvantages of the present system, and it enters into the subject of fines as promising to have a more beneficial effect. I am myself strongly in favour of a trial being given to the modifications proposed by Captain Goff, and I have thought it advisable to send his report in full; the views that are entertained therein are held by a considerable number of officers, whose attention is daily drawn to the subject of the best mode of dealing with the crime of drunkenness in the army.

For these reasons I venture to submit the matter for the consideration of His Royal Highness.

I have &c.
George Grant,
Lieut.-General.

The Adjutant-General to the Forces,
&c. &c. &c.
Horse Guards, London.

Memorandum.

Report on the System as at present in force in the British Army for the Punishment of the Crime of Drunkenness.

1st Brigade Office, Malta,
24th December 1867.

By the Articles of War (1867),—

"Any soldier who shall, within 365 days, have been "drunk four times, or twice drunk when on or for duty "or on parade, or on the line of march, or again,—— "who, within 168 days after conviction for habitual "drunkenness, shall be drunk twice, or shall be once "drunk when on or for duty or parade, or on the line of "march, may be charged with *habitual drunkenness.*"

Circular letter, dated Horse Guards, 11th August 1865, directs that every soldier rendering himself liable to be charged with the crime of habitual drunkenness (under the above quoted Article of War) *shall*, except in special cases, be tried by court-martial.

The accompanying return (page 3) has been compiled from the prison and cell registers and includes all cases of habitual drunkenness which have occurred in the Malta division between the 1st December 1866 and 30th November 1867 (12 months).

The average strength of sappers, gunners, and privates (exclusive of all non-commissioned officers) in Malta during the period quoted was as follows:—

4676.

The return (page 3) recapitulated, shows:—

1st. Total number of courts-martial (held on cases of habitual drunkenness) - -	458
2ndly. Number of days imprisonment undergone in military prison and cells under award of courts-martial for habitual drunkenness - - -	15,183
3rdly. Number of days imprisonment undergone in regimental guard rooms by prisoners awaiting trial by court-martial for habitual drunkenness -	916
4thly. Total number of days labour lost to the public by imprisonment for drunkenness (under sentence of courts-martial) - - - - - -	16,099

Return of Cases of Habitual Drunkenness unaccompanied by any other Offence.

Corps.	Number of Trials.	Days Imprisonment awarded.
3rd and 10th Brigade, Royal Artillery.	36	1,749
Royal Malta Fencible Artillery -	8	394
Royal Engineers - -	15	763
1st Battalion, 8th Regiment -	66	2,069
2nd Battalion, 8th Regiment -	76	2,312
1st Battalion, 14th Regiment -	28	621
1st Battalion, 24th Regiment -	55	2,012
29th Regiment - - -	23	834
31st Regiment - - -	27	782
1st Battalion, 60th Rifles -	40	1,064
64th Regiment - - -	27	1,001
84th Regiment - - -	16	448
Army Hospital Corps - -	1	14
Total - -	418	14,063
Other cases of habitual drunkenness as explained in Memorandum - - - -	40	1,120
Total - -	458	15,183

Of these 15,183 days imprisonment,—
12,958 were undergone in military prison,
2,225 in cells.

15,183

Memorandum.

In addition to the 14,063 days imprisonment awarded as per return for simple cases of habitual drunkenness by 418 courts-martial, there were 40 cases of habitual drunkenness, accompanied by other and in most cases serious offences.

Supposing these 40 cases of habitual drunkenness had not been accompanied by any other offence, and

calculating the punishment that would have then been awarded at 28 days imprisonment for each instance, we have 40 × 28 = 1,120 days imprisonment which must be added to the total shown in the return.

The imprisonment shown as undergone in guard rooms, viz., 916 days, is the time which prisoners (who were awaiting trial by court-martial for habitual drunkenness) have spent in confinement, and is calculated at two days in each case, thus 458 × 2 = 916.

Soldiers while in confinement in Malta cost the public at the following rates per diem, viz.:—

	d.
In the military prison, subsistence	4½
„ „ washing	¾
	5¼
In garrison or barrack cells, subsistence	5½
„ „ washing	½
	6
In guard rooms, subsistence	6

It results from the above that between 1st December 1866 and 30th November 1867, the maintenance of prisoners confined in Malta for the crime of habitual drunkenness was as follows:

	£	s.	d.
In military prisons (St. Elmo)	283	9	1½
In garrison or barrack cells	55	12	6
In guard rooms	22	18	0
Total	361	19	7½

In addition to this sum expended for subsistence it is necessary to take into consideration,—

1st. Wear and tear of prison clothing (which is scarcely covered by the charge made against each prisoner during the first 28 days of his imprisonment, at the rate of 8½*d.* per diem).

2nd. Wear and tear of prison tools and utensils.

3rd. The support of an extra number of prison warders owing to the large number of prisoners.

The following may be taken as a summary of the *advantages* and *disadvantages* to the public by the present system of punishing drunkenness, viz.:—

Advantages of the present System.

1st. The saving of the money difference between a soldier's full pay and his cost while in confinement. (Between 1st December 1866 and 30th November 1867, the amount thus saved may be calculated for Malta at about 442*l.* 19*s.* 4½*d.*, taking the soldier's full pay at 1*s.* per diem throughout).

2nd. The money gain consequent on the system of stoppages awarded by courts-martial for habitual drunkenness. (There were 458 courts-martial during the period above quoted, and calculating the stoppages to have been in each case at the rate of 1*d.* per diem for 168 days (in accordance with the provisions of the Articles of War) they would have amounted to 320*l.* 12*s.* 0*d.*, giving a total gain to the public of 763*l.* 11*s.* 4½*d.*

The advantages above stated are more apparent than real, for with regard to the first; although it may be argued that "since a soldier while in confinement "receives no pay, and that the charge for his support "in prison is only about half the amount that his full "pay would be were he at his duty, and that therefore "the public are the gainers by the saving thus effected," yet this is not a sound mode of reasoning, for at such rate it were better not to have the soldier in the service at all; the cheapest soldier being one who does his full amount of work, drawing his full amount of pay; and a soldier in prison is a burden to the State, useless, and therefore most expensive. And with regard to the second advantage quoted, "There is no doubt that an "amount of stoppages equal to that gained under the "present system of trials by courts-martial would be "obtainable under a revised and better system."

Disadvantages of the present System.

1st. The expense of subsisting a large number of useless men in prison and cells (amounting as has been shown to about 361*l.* 19*s.* 4½*d.* in Malta between 1st December 1866 and 30th November 1867).

2nd. The expense attending the support of an increased number of prison warders, of supplying tools, utensils, prison clothing, &c., &c., &c.

3rd. The large number of courts-martial and long terms of imprisonment awarded for drunkenness in those stations (such as Malta) where the soldiers cannot easily absent themselves and thus evade being found drunk, and a large increase of the crime of absence in England and such stations where soldiers can absent themselves and thereby screen their drunkenness.

4th. An overcrowding of prisons and cells, and the discredit it throws on the army as also the demoralizing effect it has on soldiers (prisoners confined for drunkenness being treated in precisely the same manner as soldiers convicted of serious and disgraceful crimes).

5th. The loss to the public of a vast amount of labour (thus in Malta during the period quoted, 16,099 days were undergone in prison and lost to all useful purposes).

6th. A large amount of extra work thrown on the shoulders of the well-conducted men.

7th. The wearing out of the well-conducted men by the extra work they perform (especially sentry duty at night), and likewise the wearing out of the prisoners by the effect of the life of confinement they lead, by both of which circumstances the hospitals are kept full, the invaliding boards multiplied, and the pension lists increased.

8th. The evil effect which the report of these constant imprisonments has on the recruiting of the army.

The system established for the trial of soldiers for the crime of habitual drunkenness was devised in order to deter soldiers getting drunk. That the system has failed in its object, needs no proof to those who have seen its results. When the many serious disadvantages above stated (and which are not counterbalanced by any substantial advantages) come likewise to be considered, it is not unjust to say "that the system at present in "force is *bad* and ought to be discontinued."

A system is required by which the crime of drunkenness shall be punished.

1st. Without entailing useless expense on the public.

2nd. Without causing loss of labour.

3rd. Without throwing unfairly extra work on good soldiers and wearing them out.

Many schemes may be devised for obtaining such results, and doubtless all may be met with objections. The following propositions embody a few suggestions put forward by advocates of a revised system.

1st. That the crime termed "habitual drunkenness" should be done away with.

2nd. That courts-martial should not (except when special circumstances require it) be called upon to adjudicate on acts of drunkenness.

3rd. That each instance of drunkenness should be dealt with finally at the time of commission of the offence, and not made subsequent use of in framing a charge of habitual drunkenness (as done at present).

4th. That officers commanding battalions should be empowered to administer fines (according to a fixed scale) for every instance, whether of *drunkenness* or *absence*, in addition to such other minor punishments as at present within their power to award.

5th. That every soldier should have right to appeal to a court-martial, whenever subjected to a fine by his commanding officer.

In support of the above propositions it is necessary to remark,—

1st. That a soldier (under the present system) is punished virtually *twice* for each act of drunkenness he commits, viz., at the time of commission of the offence, and again by having each instance of his past drunkenness brought against him in a subsequent charge of habitual drunkenness.

This system of double punishment is unfair, and causes dissatisfaction, and therefore it would be better to deal only *once* and *then finally* with each offence at the time of its commission.

2nd. With regard to the proposition of administering equal fines for *drunkenness* and *absence*, necessity would enforce such a measure, otherwise a soldier, when drunk, would avoid the fine by absence, for which latter offence he could (under the present system) only lose his pay for the day or days of his absence.

In framing a suitable scale of fines for drunkenness and absence the following points would serve as a guide, viz.:—

By the 78th Article of War, "stoppage of pay to be "awarded by regimental courts-martial for habitual "drunkenness is limited to 1*d.* per diem for a period "not exceeding 168 days (amounting to 14*s.*)."

The same Article of War directs "that in no case "shall a soldier be at any time placed under forfei-

"tures exceeding in the whole amount 3*d.* per diem" (amounting to a sum of 7*s.* 6*d.* per month of 30 days).

Since the framing of the above Articles of War the soldier's pay has been increased by 2*d.* per diem (amounting to 5*s.* in a month of 30 days), and there seems no reason why, if a soldier misconducts himself, that this additional 5*s.* should not be made liable to stoppage, and that instead of 7*s.* 6*d.* being the excess of stoppages allowed (as at present) during any one month, that 12*s.* 6*d.* should be fixed upon as the sum not to be exceeded for the future.

Making a *corresponding* increase in the amount of stoppages which a regimental court-martial should now (owing to the late increase of pay) have power to award, it would be found that (instead of 168 days stoppages at 1*d.* per diem amounting to 14*s.*) an increased number of days stoppages, amounting to no less than 24*s.*, would be proportionate.

This sum of 24*s.* being therefore fixed upon as a fair stoppage to be awarded by a regimental court-martial for habitual drunkenness, and (habitual drunkenness consisting generally of four instances of drunkenness) the scale of fines to be administered by commanding officers could easily be determined.

The following scale might be found suitable (remembering that *absence* is amenable to the same fine as *drunkenness*) :—

	s.	*d.*
For a first offence - -	2	6
Every subsequent instance -	5	0

By this scale the full amount of stoppages which any commanding officer might inflict for any four instances would be limited to 20*s.*

Whenever six months had elapsed between the actual and a former instance of drunkenness or absence the lesser fine (2*s.* 6*d.*) should be awarded, and in all other cases the heavier fine (of 5*s.*).

In carrying out the stoppages, instead of distributing the fine over a lengthened number of days (which is advocated in order to keep the punishment for a long time in mind), the full amount of stoppage which a soldier's pay could afford (and always leaving him, as at present, a residue of 1*d.* per diem), should be imposed at once, and the fine paid off as quickly as possible.

As regards the working of the proposed system of fines, with reference to soldiers in receipt of good-conduct pay, alterations in existing rules would be necessary; thus, at present, "any punishments awarded "by commanding officers which are termed '*regimental* "'*entries*' affect a soldier's good-conduct pay." Stoppage of pay comes under this category, and fines would necessarily (unless specially exempted) do so likewise.

In order to alter as little as possible the present system, it would seem advisable to make a rule that fines *should not necessarily* of themselves affect good-conduct pay, except when accompanied by another punishment (coming under the heading of regimental entry). By this arrangement stoppage of good-conduct pay would remain as at present entirely under control of commanding officers, and the system of fines would not fall unfairly on soldiers in receipt of good-conduct pay who may from time to time commit an act of drunkenness or absence.

In support of a revised system, as herein advocated, it is necessary to call attention to the fact that in every British battalion are to be found a certain number of men who (though having perhaps never committed what might be termed a serious crime) are, owing to their drunkenness and the system of punishments adopted, a burden to the State, a burden to their comrades in the regiment, and useless to everybody.

These men spend the greatest portion of the year in prison, are released from time to time for a few weeks, only to be again tried and imprisoned. They are finally discharged utterly broken down, and (without having perhaps ever committed any serious offence) are stamped as "bad characters," and return to their homes having no pleasant tales of soldier's life to tell, but able to recapitulate the miseries of many prisons, and to do much by their very appearance to counteract the best efforts of the recruiting serjeant.

The system proposed in these pages would tend to obviate many of the evils put forward. Drunkards should be punished without being thereby made a tax to the State and to their regiment. Their pay should be stopped. They should be confined to their barracks, undergo punishment drills, and take share of duty fairly with well-conducted men. By being kept out of prison their health would suffer less, and in many instances they would avoid earning the epithet of "bad character," which every discharge board must award after perusing a long list of imprisonments.

In conclusion, and in order to form an approximate estimate for the British army generally of the results of the present system, and taking the statistics gathered from the Malta division as standard, we have—

Malta.

Between 1st December 1866 and 30th November 1867.

Average strength of division in sappers, gunners, and privates, and exclusive of all non-commissioned officers - -	4,676
Number of trials for habitual drunkenness - - - - - - - -	458
Number of days imprisonment awarded and lost to the State - - - -	16,099
Bare cost of prisoners' subsistence -	361*l.* 19*s.* 7½*d.*

By Army Estimates, 1867-8 (pages 6 and 7, and Appendix, Vote I.).

Strength of British (exclusive of troops serving in India) in sappers, gunners, and privates, and exclusive of all non-commissioned officers - - -	102,343

Working out the proportions according to the proportion in the Malta division, we should have,—

Number of trials for habitual drunkenness - - - - - - - -	10,024
Number of days imprisonment undergone and lost to the State - - -	352,356
Bare cost of prisoners' subsistence -	7,921*l.* 19*s.* 0*d.*

R. Goff, Captain 15th Regiment,
Brigade Major, 1st Brigade.

The Assistant Adjutant-General,
Valetta.

(7.)

From Montreal.—Copy of a Letter on Habitual Drunkenness.

September 1865.

I have the honour to request that you will submit to the Lieutenant-General Commanding some remarks upon the punishment of drunkenness which, if he approves of them, I should wish to be forwarded for the consideration of the military authorities.

The general rule which I have laid down as a guide to commanding officers in the district under my command is, that soldiers shall be brought to trial for habitual drunkenness on the sixth occurrence, and for a third act after a conviction, leaving it to the discretion of the commanding officer to relax the rule when a more than ordinary time has elapsed between the fifth and sixth act, thereby showing some determination on the part of the soldier to abstain.

The number of courts-martial for drunkenness is very large. It is a great evil making courts-martial common for a crime which, though properly condemned by officers as the cause of nearly all other crimes, yet is not looked upon as a very heinous offence among the class from which private soldiers usually spring. The soldier is by sentence of court-martial lost for a time to his regiment, and his comrades are doing his duty, and the imprisonment does not prevent the recurrence of the crime.

I submit that it would be a useful power in the hands of commanding officers if they were empowered to deprive a soldier who had been more than four times drunk within 12 months of 1*d.* a day for two months for each subsequent act, but limited to not more than 3*d.* per diem. It would be a good arrangement that when a man was under stoppages for necessaries served out to supply ordinary wear and tear, that the commanding officer should have the power of suspending the deprivation of pay until the man was free of debt.

Commanding officers have the power now to deprive a good-conduct soldier of 1*d.* a day for one year; they therefore, if fit to be at the head of a regiment, might have this power conferred upon them. It would save many courts-martial, and the soldier would be more at his duty.

(Signed) Jas. Lindsay,
Major-General.

CONFIDENTIAL MEMORANDUM on HABITUAL DRUNKENNESS issued soon after the receipt of the Horse Guards Order.

Soldiers to be tried on the fourth act; no exception unless by special permission of the Major-General.

1. It is desirable that a soldier who has never been tried by a court-martial should not be tried for habitual drunkenness so long as there is fair reason for the commanding officer to apply for a remission; such application to depend upon the time elapsed since the previous act of drunkenness and general character and disposition.

2. When a soldier has been three months or thereabouts clear of drunkenness since the commission of the *third* act, or a considerable time had elapsed between the *second* and *third* act; or if the *first* act was within one month of being cancelled, such soldier might be considered as endeavouring to keep himself clear, and commissioned officers should apply not to try him.

3. If after a conviction of habitual drunkenness *two* months has elapsed since the commission of the *first* act, or if the first act is within *one* month of being cancelled, the commanding officer may apply for the man to have another chance.

4. When a soldier is convicted of habitual drunkenness for the first time, a stoppage of pay for 84 days without imprisonment would suffice.

5. In case of a soldier who has previous convictions, but who has not been tried for habitual drunkenness for 12 months or thereabouts, stoppage of pay and seven days' imprisonment would suffice.

6. In case of a second conviction within 12 months, but more than six months since former conviction, deprivation of pay with 14 days imprisonment.

7. In case of a second conviction within six months, deprivation of pay and 21 days imprisonment.

8. In case of a third conviction within 12 months, deprivation of pay and 28 days imprisonment.

In case of a fourth conviction within 12 months, garrison court-martial, full stoppage of pay, and 42 to 56 days imprisonment.

Character will of course have its due weight; and while this Memo. is intended only to serve as a guide, yet commissioned officers are requested to intimate to presidents of regimental courts the object in view, and in confirming the proceedings to act in the spirit of the above.

(Signed) JAS. LINDSAY,
Major-General.

(9.)

Major Welman, 1st Depôt Battalion.

Is of opinion that the present mode of dealing with drunkenness is not effective in repressing it in the young soldiers; nothing will stop the old drunkards.

Produces a return from one depôt of four soldiers tried respectively 16, 14, 12, and 7 times for habitual drunkenness.

Approves of trying fines, if the interests of captains of companies are sufficiently guarded.

Thinks the soldier should by subsequent good conduct be able to recover the sums he has forfeited, as in the case with forfeited service it would prove a great encouragement to them to abstain.

Thinks trial for habitual drunkenness should be resorted to after a soldier has been four times drunk in six months.

Depôt 1/1st Royal Regiment.

RETURN of MEN tried for Habitual Drunkenness, showing the number of times tried, number of days in Prison, and number of days on which pay was stopped.

Regimental Number.	Rank and Names.		Number of Times tried for Habitual Drunkenness.	Total Number of Days in Prison.	Total Number of Days on which Pay has been stopped.	Remarks.
2064	Private	Thomas Brady	12	456	1,906	Enlisted 5th May 1846.
3057	,,	John McGarth	14	483	2,243	Enlisted 18th May 1852.
3334	,,	Jeremiah Leary	16	674	3,704	Enlisted 14th December 1846.
3409	,,	Robert Gerygan	7	336	1,738	Enlisted 17th November 1847.

A. J. FORD, Captain,
Commanding Depôt,
1/1st Royal Regiment.

Quartermaster Smith, Scots Fusilier Guards.

Is of opinion that in the class of society to which soldiers belong drunkenness is not looked upon as a serious offence, nor is he himself disposed to look on it in that light, so long as it is unaccompanied by any other crime.

He does not think imprisonment for drunkenness has any deterring effect on the men. They do not look upon it as a disgrace, nor do their comrades take that view of it; on the contrary the offenders rather consider themselves in the light of fine fellows, and others think them the same.

He (Mr. Smith) is an advocate for long confinement to barracks, but recommends that defaulters should be permitted to enter the canteen during the day at some fixed hour; this would enable them to spend some of their money and prevent an accumulation of pay while the men are confined to barracks.

He considers fines would have a beneficial effect, but would not inflict them for the first or second offence.

If a man remained clear of drunkenness for nine months, an act of drunkenness should be treated as a first offence, and the fine not inflicted.

Colour-Serjeant Charles, 2nd Battalion, 1st Foot.

Does not think fines would put a stop to drunkenness.

Recommends the payment of the men weekly, instead of daily, and thinks it would have a beneficial effect, as a larger sum of money in the man's possession would induce him to be more careful. The probability would be he would spend it in some article he wanted, and not in drink.

The men who are constantly drunk are those who draw least pay.

He believes that men who are drawing the full amount get seldom drunk.

He does not think imprisonment has any effect to check drunkenness. Soldiers do not care about being tried or going to prison after the first time, nor does he think that other soldiers are deterred by the example.

Colour-Serjeant Dolan, 2nd Battalion, 17th Foot.

Advocates weekly payments and fining for *every* act of drunkenness, considers confinement to barracks is more disliked by the men than imprisonment in the cells.

Serjeant-Major McBlair, Scots Fusilier Guards.

Is in favour of fines at a high rate, and to be stopped at the rate of 1*d.* a day.

Thinks the power of confining men to barracks should be extended to a longer period than 28 days.

He does not approve of defaulters being permitted to go to the canteen.

Serjeant-Major Haylock, Grenadier Guards.

Recommends the imposition of fines for drunkenness, but not in the first case, and would combine that punishment always with confinement to barracks.

He considers the fines should be paid as soon as possible, and not by small instalments spread over a lengthened period.

Advocates allowing defaulter into canteens, and weekly payments at the option of the man, with the sanction of the commanding officer.

Serjeant-Major Sampson, Coldstream Guards.

Considers fines would have a great effect, by depriving men of their money to spend in drink.

Recommends longer confinement to barracks.

To be increased to 42 days.

Does not approve of weekly payments, or the infliction of a fine for first offence.

(10.)

A STATEMENT of Serjeant-Major JOHN WATTS, 1st Depôt Battalion relative to the prevention and punishment for drunkenness in the army.

The first time a soldier is confined for being drunk he should be admonished, cautioned, and told the consequences of drunkenness in the army. Second time, seven days confined to barracks. Third time, 14 days confined to barracks, 2*s.* 6*d.* fine, and forfeit one badge, and so on, for every offence for drunkenness if in possession of the same. Fourth time, 14 days confined to barracks, 2*s.* 6*d.* fine, and forfeiture of seven days service. Fifth time, 21 days confined to barracks, 5*s.* fine, and forfeiture of 14 days service. Sixth time, 28 days confined to barracks, 7*s.* 6*d.* fine, and forfeiture of 14 days service. Seventh time, 28 days confined to barracks,

10*s.* fine, and forfeiture of 14 days service. Eighth time, 28 days confined to barracks, 10*s.* fine, and forfeiture of 21 days service. Ninth time, 28 days confined to barracks, 12*s.* 6*d.* fine, and forfeiture of 28 days service. Tenth time, tried by a battalion court-martial, sentenced to 28 days imprisonment with hard labour, forfeiture of 28 days service and 365 days at 1*d.*, and degraded to the 2nd class.

If two years clear, reinstated to the 1st class.

Should the soldier commence his drunkenness in the 2nd class, and continue to do so. First time, 14 days confined to barracks, 2*s.* 6*d.* fine, and forfeiture of seven days service. Second time, 14 days confined to barracks, 5*s.* fine, and forfeiture of 14 days service. Third time, 21 days confined to barracks, 7*s.* 6*d.* fine, forfeiture of 14 days service. Fourth time, 28 days confined to barracks, 10*s.* fine, and forfeiture of 14 days service. Fifth time, 28 days confined to barracks, 12*s.* 6*d.* fine, and forfeiture of 21 days service. Sixth time, 28 days confined to barracks, 15*s.* fine, and 28 days forfeituro of of service. Seventh time, 28 days confined to barracks, 15*s.* fine, and 28 days forfeiture of service. Eighth time, 28 days confined to barracks, 15*s.* fine, and forfeiture of 50 days service. Ninth time, 28 days confined to barracks, 15*s.* fine, and forfeiture of 100 days service. Twentieth time, to be tried by a district court-martial and sentenced to 365 days imprisonment, and in addition to be imprisoned for the number of days service he has forfeited during his service, to be marked with B. C. and D., to be dismissed the service as an incorrigible character.

My reasons for this system of punishment, is that the soldier would always be available for duty with the exception of 28 days, the first term of imprisonment, and thereby would not impose his duty on the good and sober soldier, as he does at present, by being tried on the fourth time for habitual drunkenness, and by the present system the soldier after having been imprisoned three or four times, loses all respect for himself. But by the other system of punishment, the soldier would not feel degraded until he was tried, and then he has the opportunity of redeeming his character by keeping clear for two years; and I think he would be very careful to keep clear from proceeding in his drunkenness to come to the 20th time.

I should also propose that lectures be given to the men once a month, showing them the consequences of the evils of drunkenness.

That the money so forfeited in fines, should be placed in a fund for the purpose of defraying any debt that he may have incurred; in case he should be an incorrigible character and discharged from the service, thereby his captain nor the public would suffer from his conduct. My reasons for not awarding more than 28 days confinement to barracks at a time, is that the soldier would be kept too long from society, which would tempt him to commit the crime of breaking out of barracks.

But by whatever system can be thought of to prevent drunkenness, it never will be entirely prevented, as there are men in the service, also out of the service, that would get drunk, if you actually placed the gallows in front of them, and told that they should be hung for it.

Statement made by Serjeant-Major W. Swain, 1st Battalion, 1st Foot.

Is of opinion that if the pay was issued twice a week to the men it would in a great measure prevent the crime of drunkenness for this reason; there are several articles that a soldier when he is walking out might see and wish to purchase, but owing to his only having a day's pay with him, viz., 6*d.*, he is unable to do so, and at the same time have a pint of beer during the day, whereas if he had 1*s.* 6*d.* or 2*s.* he could purchase any small article that he might require and still have sufficient money left for any liquor that he might wish for. A soldier after receiving his day's pay generally gets a pint of beer for dinner, he then finds that the sum remaining is not sufficient to purchase anything from town, so that the remainder of the pay then goes in liquor; whenever a soldier wishes to purchase any extra clothing he has to get an advance of pay from the captain to enable him to do so, but by issuing the pay twice a week he would not require to do that.

A system of fines would be very well if left to the discretion of the commanding officer, for this reason, about two-thirds of the men that are tried for habitual drunkenness are men on short pay, and some are even in debt to the company; a fine in that case would be of no use as it would bring the man more in debt, and consequently the man would become more careless, on the other hand, a fine inflicted on a man who occasionally commits himself would have more effect than sending him to prison (especially on a young soldier). A soldier generally dreads the idea of prison for the first time, but I am of opinion that the oftener they are sent to prison the more hardened they get, until at last they grow that careless that they would as soon go there as to an ordinary parade. As I have heard men of my own regiment say in India, they would prefer prison to confinement to barracks, as it is generally the same lot of men that go to prison, so that itself shows that they would rather be there than doing regimental duty.

W. Swain, Serjeant-Major,
1st Battalion, 1st Royals, Chatham.

Fines on bad characters will have little effect, as this class of men are very often in debt and they can make away with their necessaries, and often do. On the good soldier who may happen to get drunk occasionally, fines will have a good effect and save him the disgrace of going to prison during his service; therefore commanding officers should have the power of inflicting fines, and take into consideration the man's general conduct in awarding him his punishment. The men of my company who get least pay are oftenest in the guard room for being drunk. Men in general don't like going to prison. I would pay the men twice a week. Workshops for the several trades would be a great benefit; men attending them have less drill than others.

M. Hammond, Color-Serjeant,
109th Regiment.

Statement of Color-Serjeant P. McNally, 2nd Battalion 15th Regiment, regarding Drunkenness in the Army.

Having been asked by Major Welman, 1st Depôt Battalion, to state my opinion regarding the crime of drunkenness in the army and how fines would act instead of the present mode of punishment for this offence, I beg most respectfully to state that in my experience of the service I generally found that the drunkard is a man in receipt of the lowest rate of pay, nearly always under stoppages for necessaries, which he destroys when drunk, and other stoppages; the only reason which I can give for this is that the man who so sets his heart upon drink will resort to the lowest means to get it, (his pay not being sufficient,) and those are generally men of low morals and not by any means good soldiers. I am therefore of opinion that to inflict a fine on a soldier of this description would not be any advantage because he is most invariably in debt, and the chances are that if the fines increased his debt to any great extent the man will desert, leaving the whole sum a debt against the captain of his company.

There are other men who are very good soldiers, but who sometimes get drunk, perhaps four times in a year, and get tried by court-martial; a fine to this class of men would be a greater punishment and would in my opinion operate better, because they would feel the punishment equally severe and would not undergo the risk of getting hardened in crime by going to a military prison. The commanding officer generally knows the class of men to whom a lighter punishment than trial by court-martial could be advantageously given, and should not, in my opinion, be bound to try a soldier for being four times drunk in a year. Surely the commanding officer should be allowed to take into consideration the man's previous character. I also believe that it is not always the greatest drunkards who get tried by court-martial for "habitual drunkenness," for instance, a man gets drunk and knows if he is noticed he will be confined, and he therefore stops absent without leave, comes into barracks when sober, and gets punished for absence instead of drunkenness.

I think that men of good character should be allowed (if they wish) to draw their pay weekly; this should be left at the discretion of captains of companies, and if the men should commit themselves by getting drunk let them be deprived of this advantage and made to take their pay daily.

On the whole I think that a good system of fines would operate well.

For instance, if a man is fined, his company debt (if any) should first be recovered and the fines stopped and credited to the public afterwards, and should not in the case of the man's desertion, or becoming non-effective before the amount is recovered, be charged against the captain of his company. It should also be left to the

discretion of the commanding officer whether to fine a man or give him other punishment, because he generally knows on whom fines would best operate.

P. McNally, Color-Serjeant,
2/15th Regiment.

Chatham, 29th January 1868.

B. (11.)

Return showing the Number of Trials for Habitual Drunkenness in the Army during 1864 and 1866.

Adjutant-General's Office, 23rd Jan. 1868.

Year.	Number of Trials.
1864	4,632
1866	9,736

C. R. Egerton,
Deputy Adjutant-General.

C. (12.)

Approximate Number of Trials for Habitual Drunkenness in the Army during 1867.

Adjutant-General's Office, 11th Feb. 1868.

	Number of Trials.
During 1867	9,438

C. R. Egerton,
Deputy Adjutant-General.

(13.)

Drunkenness.

1st offence	Confined to barracks.
2nd do. above 4 months or 6 months out of either defaulter book	6 days drill and barracks.
Do. *within* 4 months	Regimental defaulter book.
4th do. in the regimental book	Warned for trial for 3 months.
5th do. do.	Tried.
Do. above 3 months, but within 4 months.	Warned again for 3 months.
Do. above 4 months	6 days' drill and barracks.
Do. above 12 months	Confined to barracks.

After a previous Conviction.

2nd instance	Warned for trial.

1. It is better to confine to barracks every man who has been drunk, even if it be the first offence, because he is apt to commit himself immediately after he is released.

2. For some years every second instance of drunkenness was entered in the regimental book; latterly within six months.

3. These rules applied equally to men with good-conduct pay, who as a matter of course lose their good-conduct pay on being entered in the regimental defaulter book. To be just you must carry out the rule without deviation.

The only difference I made with good-conduct men was this. Supposing a man to have lost his penny by an entry, and in a fit of disgust he came up again directly, I did not enter him again, which would take *another penny*, or keep him out of the first for two years, but I entered him only in company book, explaining the reason, but of course inflicting the penalty in full if he appeared again.

As men with good-conduct pay are the greatest sufferers (in the pocket) by drunkenness, so they should have some advantages, and I never put them into a drill squad except for instruction drill. For instance, in a case of drunkenness above four months out of either book, I only confined them to barracks.

It becomes equally necessary to warn men for trial for *absence*, which, if not repressed with a steady hand, will be almost as great an evil as drunkenness, and men who are liable to be tried or to lose good-conduct pay will stop absent to avoid those penalties.

Every man who absents himself all night should be made a regimental defaulter, and on the third or fourth instance warned for trial for three months.

This system will be found to act well, provided you never overlook drunkenness, either in *officers* or *non-commissioned officers*.

Major-General Lawrence, C.B.

January 8th, 1857.

(14.)

Confidential Reports.

1st Battalion 10th Foot, by Lieut.-General Sir Percy Douglas.

Report dated King William's Town, 10th December 1867.

Extract.

"Like causes have in this regiment produced like effects, as shown in the vast number of courts-martial. In my opinion drunkenness will never be repressed by the existing mode of treatment.

"I have my own views upon the subject, which I do not wish to offer unless called upon to do so."

D.

Recommendations as to the Treatment of Drunkenness in the Army.

1. That commanding officers be empowered by the forthcoming Mutiny Act to deal with the crime of drunkenness by a system of fines.

2. That these fines should be progressive in amount on the repetition of acts of drunkenness, but, on the other hand, subject to reduction in proportion to the length of time elapsing between the offences, thereby holding out strong inducements to the soldier to abstain.

3. That the fines shall not be attenuated and spread over a long term by the deduction of a penny per diem only, but shall be inforced by an actual deduction (not a mere debit in the monthly account) of not exceeding fourpence or less than threepence per diem, until the fine is paid; thereby depriving the offender of the means of obtaining liquor.

4. The fine for a second offence, when under stoppages for a former act of drunkenness, shall commence when the first is paid.

5. That the soldier, in every case of fine, shall have the right of appeal to a court-martial.

6. That confinement to barracks may be combined with fine as a punishment for drunkenness, it being left to the discretion of commanding officers to determine the amount, having regard to the character of the soldier, and whether the act of drunkenness is accompanied by some other crime; but that it shall be considered a rule that in all cases after the commission of an act of drunkenness a soldier shall be kept in barracks for 24 hours without punishment drill, such drill when carried out before recovery from the effects of drink, having in many cases given rise to insubordination.

7. Further, that as a general principle, in awarding punishments for drunkenness in connexion with fines, commanding officers be confidentially instructed to bear in mind the rule which obtains in civil courts, that a fine in a great degree condones the offence; and that they should abstain from awarding lengthened punishments in addition to fine for simple acts of drunkenness, except in aggravated cases or frequency of offence.

8. That imprisonment in the garrison cells shall not in any case be combined with fine for simple acts of drunkenness, though it may be awarded for serious offences in connexion with drunkenness.

9. That defaulters for the crime of drunkenness be permitted to enter the canteen during certain fixed hours in the day, say from 6 to 8 p.m.

10. All awards of fine to be regimental entries, and to be published in regimental orders.

11. Absence from tattoo to reveillé the following morning to be considered in the same light as an act of drunkenness in calculating the fines for the latter offence.

12. That a new article of war be introduced, making it lawful for a commanding officer to inflict a fine not exceeding ten shillings for drunkenness, subject to appeal to court-martial; and providing that no soldier, by reason of drunkenness, shall be subject at any one time to a deduction of more than fourpence per diem from his daily pay.

13. That the powers given by the 78th Article of War be retained for the present, but that commanding officers shall be confidentially instructed to abstain from having resort to courts-martial as far as possible, so that the new system may have a fair trial.

14. That the crime of habitual drunkenness be subject only to trial by a district court-martial.

15. That the scale of fines and punishments annexed (marked E.) be adopted and adhered to throughout the army. Copies to be printed in clear type, and supplied to regiments, for the purpose of being placed in a conspicuous position in every barrack room.

(Signed) James Lindsay,
Major-General.
C. R. Egerton,
Deputy Adjutant-General.
E. A. Whitmore,
Assistant Adjutant-General.

E.

Scale of Fines and Punishments for Drunkenness.

First and second acts { Admonition or confinement to barracks at the discretion of the commanding officer.

For every subsequent act of drunkenness:—

If within 3 Months of former Act.	If over 3 and within 6 Months.	If over 6 and within 9 Months.	If over 9 and within 12 Months.	If over 12 Months.	When the four preceding Acts have been committed in 12 Months.
7s. 6d.	5s.	2s. 6d.	Company entry.	To be treated as the first act.	2s. 6d. to be added to the foregoing scale.

Regulations.

1. Confinement to barracks may be added to fine, at the discretion of the commanding officer.
2. In every case a soldier who has been drunk shall be kept in barracks for 24 hours subsequent to the offence, without drill.
3. Absence from tattoo to reveillé to be counted as drunkenness in computing the amount of fine for the latter offence.
4. Forfeited service by imprisonment or absence not to count in any calculation for exemption from fine.
5. When fine is awarded the soldier has the right of appeal to a court-martial.

(Signed) James Lindsay,
Major-General.
C. R. Egerton,
Deputy Adjutant-General.
E. A. Whitmore,
Assistant Adjutant-General.

No. 8.

Scale of Fines and Punishments for Drunkenness proposed by a Committee of Officers appointed by His Royal Highness the Commander-in-Chief.

First and second acts - Admonition or confinement to barracks at the discretion of the Commanding Officer.
For every subsequent act of drunkenness—

If within 3 Months of former Act.	If over 3 and within 6 Months.	If over 6 and within 9 Months.	If over 9 and within 12 Months.	If over 12 Months.	When the four preceding Acts have been committed in 12 Months.
7s. 6d.	5s.	2s. 6d.	Company entry.	To be treated as the first act.	2s. 6d. to be added to the foregoing scale.

Regulations.

1. Confinement to barracks may be added to fine at the discretion of the commanding officer.
2. In every case a soldier who has been drunk shall be kept in barracks 24 hours subsequent to the offence without drill.
3. Absence from tattoo to reveillé to be counted as drunkenness in computing the amount of fine for the latter offence.
4. Forfeited service by imprisonment or absence not to count in any calculation for exemption from fine.
5. When fine is awarded the soldier has the right of appeal to a court-martial.

No. 9.

Letter from Colonel G. B. Shakespear, commanding Royal Artillery, centre division, to Lieut.-General the Right Hon. J. Peel, M.P.

R. A. C. D. Office,
Sir, Mount, 13th April 1868.

A Royal Commission being about to inquire into the customs and practices of courts-martial, with the view of offering improvements for the benefit of the soldier as well as for the service at large, I have the honour to request your consideration of some points connected with the subject, and I take the liberty of addressing them to you as a member of this Commission.

The question of habitual drunkenness is one I have for a long time considered, and have taken the opinion of many officers, non-commissioned officers, and even private soldiers in England, as to whether this particular offence could not be expunged from the Articles of War without detriment to discipline.

After much consideration, I am of opinion that it can, and I propose, therefore, that the subject be put before the Royal Commission that the term "habitual drunkenness" be no longer used, that soldiers, when brought before their commanding officer be awarded by him for every act of drunkenness committed, and that they be punished by him according to the powers vested by the Queen's Regulations, and that a fine be added to any other award, on the same principle that pay is mulct for absence; should he be incorrigible or drunk frequently that the fine be proportionately greater, but that no former act be brought up against him. I propose in fact to treat "drunkenness" like "absence," or other offences usually committed by the soldiery. The man when in a state of drunkenness is unable to do his duty, which consequently devolves on good men.

The question generally is very well explained in a letter signed "Common sense" in the *Army and Navy Gazette*, of the 22 February 1868. I agree to the views therein expressed except as I have said,—do away with the charge of habitual drunkenness.—

At present it is well known that the compulsory trial by a court-martial of a man under the 78th Article of War has brought an evil with it.

It has increased "Absence without leave" without curing drunkenness, in fact, the latter is screened. A man will stay away five days and be mulct to that extent on his return rather than get the drunken chalk against him, and the eventual long stoppage for habitual. I have known this to be of constant occurrence. We lose the "indifferent" or "bad" man during his absence, but we lose much more of him when undergoing the imprisonment of 14 or 21 days, the usual extent of sentence by courts-martial.

Again, I may remark that long periods of deprivation of pay are objectionable. Men who unfortunately commit themselves get disheartened when they find their pay stopped for some months. I do not mean here to propose any alteration of punishment to those soldiers drunk on duty or parade, &c. They deserve all they get.

This suggestion would reduce the number of courts-martial, which have sadly increased since the order of 1865, making it compulsory to try men on the fourth time within the year, &c. Many men have suffered for this who in reality are not bad; in fact, some have appeared before a court with their good-conduct marks on.

The question of a suitable power of punishing non-commissioned officers below the rank of serjeants by their commanding officers would be useful and of great benefit to the service.

As the subject I have taken the liberty to address you on has been several times in print, with the exception of cancelling "habitual drunkenness," I will now only apologize for taking up your time, but it is one, I am of opinion, is worth consideration, as a means of keeping the soldier after his enlistment.

The opinion I have formed is, we should not have the crime of drunkenness increased, and we should do away with one source of trouble and vexation to the soldier.

I may suggest further that the good-conduct marks should not be liable to be so easily taken away as under present regulations they are difficult to obtain, easy to lose, and more difficult again to get back.

I wish further to submit that weekly in place of daily payments of men would do much towards lessening drunkenness. The soldier would learn to value and keep the half-crown, whereas he does not care for the pennies, and having no use for them, they go to the tavern keeper.

I have, &c.
G. B. Shakespear, Colonel, 5th Brigade,
Commanding Royal Artillery
and Centre Division.

Lieut.-General the Right Hon. J. Peel, M.P.,
London.

No. 10.

Report of Lieut.-Gen. Sir R. P. Douglas.

Sir, War Office, March 3, 1869.

I am directed by Mr. Secretary Cardwell to transmit to you, to be laid before the Royal Commission on Courts-martial and Military Law, the accompanying report and letter from Lieut.-General Sir R. P. Douglas, lately commanding at the Cape of Good Hope, on military crimes and discipline, and especially upon the question of drunkenness.

I am, &c.
Douglas Galton.

The Right Hon. J. Wilson Patten, M.P., &c.,
33, Hill Street, Berkeley Square.

Grahams Town, Cape of Good Hope,
Sir, September 2, 1868.

Having been required to state for the information of His Royal Highness the Field Marshal Commanding-in-Chief my opinion with regard to the adoption of more efficacious means of dealing with the crime of drunkenness amongst the troops, I have transmitted to the Horse Guards a letter upon this subject, and I deem it right to submit a copy of this for the information and consideration of the Right Hon. the Secretary of State for War, because, according to my views of this question, more efficacious modes of punishment could not be devised without touching upon financial questions, which ought to be submitted to the Secretary of State for War.

I need say nothing more in relation to my opinions upon this important and very wide subject, they are fully detailed in the accompanying letter.

I am not sanguine that the superior authorities will regard with favour all that there is therein stated, but my own convictions on the subject are strong, and I have accordingly deemed it right to give utterance to them.

Of course, the details in giving effect to my recommendations would require much consideration and much labour from the practical men, who would be charged with the initiation of any changes in the sense that I have suggested, and as I shall soon be relieved from this command, I shall be happy hereafter to afford any further explanation of my views in detail, should my suggestions be deemed worthy of further consideration.

I have, &c.
R. P. Douglas.

The Under Secretary of State for War,
&c. &c. &c.

Head Quarters, Grahams Town,
Sir, Sept. 1, 1868.

With reference to the concluding paragraph of your letter of the 29th April last, headed as per margin, I have the honour, in compliance with the wish of His Royal Highness the Field Marshal Commanding-in-Chief, to offer my opinions as to the more desirable mode of dealing with the crime of drunkenness, which is most decidedly the direct or remote cause of many, nay of most, of the crimes which necessitate an appeal to courts-martial, the powers of which have at length been gradually circumscribed within limits which, as yet, containing no substitute for corporal punishment, do not provide means for the punishment and repression of some of the worst offences arising out of drunkenness, a state of matters which renders it the more necessary to assign enlarged powers both to these tribunals and to the summary jurisdiction of commanding officers, with the view, and in the hope, of achieving the object which the existing laws, and in many places the existing means of carrying into effect the punishment usually awarded under such laws, have most decidedly failed to effect.

Confidential Report. Second Period, 1867.

The Adjutant-General to the Forces, Horse Guards, London, S.W.

I entertain the most deep conviction that long imprisonments for drunkenness have proved a failure. I am of opinion that the proper principle, both with the object of punishing offenders and of not punishing the innocent, is to make the drunkard perform as much, and not as at present as little duty as possible, substituting, largely, forfeiture or temporary stoppages of pay for imprisonment, thereby depriving the drunkard of the means of ministering to his craving for drink, and by resorting to a most stringent system of prison discipline, as a reformatory process and as a preliminary to discharge with disgrace when the ordinary modes of punishment shall have failed to reclaim the incorrigible (generally drunkards) who, at length, become an encumbrance as well as a disgrace to the army, to the prejudice of the good men, who now perform the drunkard's duties at the cost of the inevitable consequences to health which result from additional night work.

Powers of punishment, new in themselves, might have a prejudicial effect on recruiting. Hence I would suggest the resort in a greater degree to the established modes of forfeiture of pay and of service, as regards claim to pension and, in special cases, towards completion of the limited engagement; but, in carrying out still further these punishments, it will for the fore-

going reason be prudent to avoid the error of assigning to the State the profits which shall arise from such larger forfeitures of pay.

It will not suffice to the soldier's mind that the Secretary of State exercise, as heretofore, the prerogative of restoring service forfeited by sentence of court-martial. The restoration of service might be accompanied by the restoration of the pay forfeited for drunkenness, and it will, to my apprehension, be of much utility towards allaying the soldier's fears and prejudices, that courts-martial be invested with the double power of awarding, for drunkenness, forfeitures of pay, absolutely to the State (with power of restoration by the Secretary of State for War), or conditionally, the amount stopped to be repaid to the soldier upon such conditions of reformation as shall hereafter be determined. I would here observe, that, five years of uninterrupted good conduct, as a condition of restoration of service, is an unreasonable test of a man's reformation. In my opinion one year would be an ample probation after a first offence, two after a second, and three years in cases of a very aggravated character. A point to be considered is how larger forfeitures, absolute or conditional, unaccompanied by imprisonment, can be carried out with justice to the captains of companies, who are charged with the responsibility of keeping the soldier's equipment in a state of efficient completeness, and whose interests would be prejudiced by the course which I venture to suggest, in this sense, viz., that the offenders now in prison would in most cases be wearing out clothes and necessaries while undergoing stoppages of pay, thus creating heavy debts to the captains.

We have increased the soldier's pay while the limit of the forfeitures for habitual drunkenness has not been extended. Hence the punishment is now *relatively* less severe, while the means for repeating the offence remain greater by the sum of 2*d*. a day in the case of men who have not re-engaged.

It is manifestly reasonable that the drunkard should not be kept under equal restraint as heretofore, by fixing the first award of stoppages of pay for habitual drunkenness at 3*d*. a day.

This done, an increased amount of forfeiture is no longer a question of principle, but merely one of degree. But, further, the same reasoning would hold good, if the amount of forfeiture (at 3*d*. a day) during the extreme period within the powers of a court-martial to award were stopped within a shorter period, say in half the time; and it would be resorting to no new powers if the imprisonment generally awarded, were restricted to a minimum duration of solitary confinement or really rigorous imprisonment with hard labour, or remitted altogether. And the same argument would hold good in the case of summary awards by commanding officers, of imprisonment for 168 hours, which involves the loss of pay; the former might be remitted, while the latter (subject to appeal as now) might, by regulation and without any change in the law, be enforced. It is on the foregoing principle that I would venture to suggest to deal with cases of drunkenness *per se*, whether simple or accompanied by other offences. I cannot withhold the expression of my opinion, that our definition of habitual drunkenness is too stringent, nay, almost unfair; the man who merely gets drunk four times within twelve months may not be an habitual drunkard whatever the law may say to the contrary, and for my part, I must advisedly think, that it would be productive of good to make a *very great change* in this respect.

I should rejoice to see the punishment for mere simple drunkenness off duty, unaccompanied by any other offence, limited to conditional stoppages of pay, according to the frequency of the offence; other crimes (whether accompanied by drunkenness or not) to be otherwise punished, according to their nature and degree, by forfeiture of service, both as regards claim to pension and to completion of limited engagement, and by the other recognized modes of punishment.

With regard to *conditional* stoppages of pay for drunkenness I venture to suggest, that the amount be repaid to the offender at the termination of his engagement, or upon partial reformation of habits, be placed in the savings bank for delivery on discharge, or, upon a complete reformation, that the amount be placed at the man's disposal by virtue of such authority as shall be hereafter determined, and the chances are that in such cases the owner would leave it in the savings bank; but should reformation not ensue, then, that by award of court-martial the conditional stoppages be liable to be converted into absolute forfeitures. I would permit a similar principle to guide the awards by commanding officers of 168 hours imprisonment, remitting, when considered advisable, the imprisonment, but enforcing the forfeitures of pay or conditional stoppages, as the case may be; and this power I would gladly see extended. But the punishment for other offences, whether accompanied by repeated drunkenness or not, must still remain nearly the same as heretofore, chiefly imprisonment, in which case, of course, the forfeiture of pay must be absolute, on the intelligible principle that while performing no duty the soldier is not entitled to any pay; but even in these cases it may be expedient, for various reasons, to remit partially the imprisonment, maintaining the forfeiture of pay attributable to the full term of the imprisonment, thus making the offender do as much duty as possible. Resorting more largely to the punishment of forfeiture of pay, absolute or temporary, it will, as before stated, be right to protect the interests of the captains of companies against accumulations of debt for clothing and for men doing duty, but who are in receipt of no pay beyond what is necessary for their messing, and to cover wear and tear of clothing and necessaries, and this I would provide for in the following way:

In the case of absolute forfeiture of pay, whether by award of court-martial or commanding officer, by men whose imprisonment shall have been remitted, let what is absolutely necessary to subsist them and to keep up their clothing and necessaries be charged against the credit in the pay list on account of such stoppages, the sums expended for clothing and necessaries to be repaid by the individual when again in receipt of his pay.

In the same way let the foregoing be the rule in the case of temporary stoppages of pay for drunkenness.

Were the first forfeiture, or, as I recommend, temporary or conditional stoppage, of pay for drunkenness fixed at 3*d*. a day, I believe that it would be seldom the practice of courts-martial to award imprisonment with hard labour in addition to such forfeiture or temporary stoppage. And I would here remark that the general efficacy of imprisonment cannot be tested by the results of the model military prisons at a few stations, but by the results at the more numerous remote stations, where, as at the Cape of Good Hope, the accommodation for prisoners is of a nature not to possess a deterring influence, where solitary confinement is almost impracticable, where the men are in the enjoyment of associated wards, and where the prisoners are necessarily engaged in works outside the prison precincts, to the great annoyance of the duty men to overlook them.

It seems to me that the offences of soldiers are so generally the effect of drunkenness that it is vain to discuss the best mode of dealing with this offence by itself, without considering the mode of dealing with the crimes with which drunkenness is almost invariably associated, and which ends in many cases in confirmed habits of intemperance, which at length render the offenders useless to the service and a discredit to the profession at large.

But a new element in the difficulties of maintaining discipline has appeared in the vote of Parliament to abolish corporal punishment in time of peace without substituting any other means for the repression of the most serious military offences. This is a matter which weighs heavily on the mind of those who are in command of troops; it is a subject upon which I entertain strong convictions, be they right or wrong.

We fortunately possess in the existing disciplinary establishments and regulations means which, without resorting to any new powers, may be made to operate powerfully for good. I allude to our military prisons and to the regulations for discharging from the service the irreclaimable and incorrigible offenders. The Secretary of State for War can prescribe discipline and regulations for the prisons which would constitute them something akin to the "Compagnies de discipline" of the French, through which the vicious and bad men might be made to pass a probationary course before final resort to discharge, marked as bad characters. Before proceeding further with this large subject, in treating of which I have naturally in view the circumstances by which I am myself surrounded, I would exhibit those circumstances, viz., the nature of some of the crimes committed, the insufficient means for punishing those crimes or repressing them, and the ratio of bad worthless characters to the men avail-

able for duty. With this view I append statements of the number of men in confinement in two corps at my recent half-yearly inspection, from which it appears that for 358 privates fit for duty there were 47 in prison, or upwards of 13 per cent., that among these there were 39 men on whom had taken place 201 courts-martial, and against whom there had been 1,069 entries in the regimental defaulter's book.

Detachments 3 Cos. 19th Regt. Hd. Qrs., 6 Cos. 99th Regt.

I further enclose copies of charges, in several cases for the most serious military offences, for which there is no adequate mode of punishment available beyond two years' imprisonment, forfeiture of service, marking with B. C., and discharge with ignominy. For the first of these punishments, the existing orders provide that the offender shall be sent home, thus indulging him in fact for the first two months of his award, with an excursion to England, of which he is not worth the expense, but which may have, however, one merit, that it may afford an agreeable indulgence to the good men who may form the escort.

Eight trials per general courts-martial for insubordination within about five weeks, and 44 former convictions against these eight men.

(Signed) R. P. Douglas, Lieut.-Gen.

I have repeatedly but vainly pleaded for better places of confinement at this distant station, but now under the conditions of increased pay, of every possible facility for getting drunk, and of diminished powers of punishment, I may fairly ask, "Are the men mentioned "in the accompanying returns fit to be retained in the "service, and if, under the existing state of the law, "such men be not discharged, how is discipline to be "maintained, and crimes almost invariably caused di-"rectly or remotely by drink to be repressed?" I fully believe by the course I have indicated, viz., by resorting more largely to the system of forfeiture, and of temporary stoppages of pay, thereby diminishing the means of indulgence in the habit which leads to all other crimes; by making the drunkard do as much duty as possible, by restoration of pay and service after a reasonable proof of reformation, by subjection to a most stringent course of prison discipline if persistent in drunken habits, and by rejection from the service if irreclaimable.

There is one especially mischievous and most common offence, in relation to which I venture to offer some suggestions, viz., selling necessaries.

I think that it might have been far preferable to have furnished the soldier with necessaries instead of making the recent addition of 2*d.* a day to his pay, and partly for this reason, that then, both in a moral and strictly legal point of view, everything committed to the soldier's charge would have been in the fullest sense public property, and the making away with or selling anything in his possession would have been a fraudulent and criminal act, deserving to be treated as a disgraceful offence on the part of the soldier; but, what is of far more consequence, the same rule would equally apply to the purchase from a soldier of any article belonging to the public.

The class of men who deal in such business are the lowest of the low, to whom should be applied a far more rigorous punishment than is awarded by the Mutiny Act on the first conviction of this offence, and I would unhesitatingly suggest a material change in this respect.

It is but right and fair to the army and to the public interest that this offence be more severely punished, and I would suggest that on a *first* conviction for this offence, the purchaser or receiver from a soldier of any article belonging to the public should suffer imprisonment with hard labour, with the obligatory infliction by the magistrate of the existing fines prescribed by the 85th clause of the Mutiny Act.

In conclusion, I must frankly admit that I do not anticipate the disappearance of drunkenness from our ranks by the adoption of my suggestions or by any other means, for this is the vice of the class from which our ranks are mainly filled, not of the soldier as such. The habit has in many cases led to the abandonment of civil for military life; but I do think that a patient trial of my suggestions would effect some good. I am entirely convinced that matters would not be the worse for their adoption, that at any rate we should have more bad men doing duty, and the good men relieved from much trying night work; that larger, though not new, powers would be conceded to commanding officers; that it would be a tentative effort in the right direction to deprive the drunkard for the time of the means of ministering to his craving without incurring those forfeitures to the public which are calculated to generate a feeling prejudicial to the popularity of the service, while holding out at the same time increased premiums on reformation of habits; that it proposes to resort to every conceivable means for the purification of our ranks from the besetting evils which are now, alas, more apparent than ever, by forfeiture and temporary suspension of pay in the first instance, by a stringent disciplinary probation, and by a final discharge with disgrace when all attempts at reclamation or repression shall have failed; and I would confidently appeal to the statements contained in this communication, and to similar information to be obtained from like sources, in proof of the insufficiency of the existing laws to repress drunkenness and to maintain in other respects the discipline and character of the army, so long as the process of discharge of the incorrigible be not far more largely resorted to.

War is the exception—peace is the rule, and it is chiefly for the latter, and not for the former, that it is immensely desirable to devise, in the failure of existing means, more effectual modes for the repression of drunkenness and for the rejection from our ranks of the incorrigible and vicious, who are at the same time in most cases the irreclaimable drunkards of a regiment.

In the record of recent offences within my command I see grounds for apprehension that a wholesome restraining order of punishment (seldom resorted to) having been abolished, and no other having been substituted for it, the means of indulging in intemperance (the generator of all other crimes) having been increased, while the restraint over the drunkards is relatively less. In these facts I see ground for apprehension that it may become necessary to resort to those extreme punishments which powers now abrogated have heretofore rendered unnecessary, unless we remove from our ranks the incorrigible characters for whose restraint corporal punishment was reserved. It is an indisputable fact that this great power, so seldom exercised but in the case of the most depraved and vicious in our ranks, answered the end in view; and since no new powers of punishment have been substituted for that which has now so suddenly been taken away, it is but reasonable that, with the abrogation of the means of keeping them in order, the incorrigible be turned out of the service, but if retained in our ranks efficient means of control in the form of a stricter code of prison discipline, of the extreme punishment of penal servitude and death, will have to be resorted to more frequently than has, happily, been the case heretofore.

I have, &c.
(Signed) R. P. Douglas,
Lieutenant-General.

The Adjutant-General to the Forces,
&c. &c. &c.

No. 11.

CORRESPONDENCE on IMPROVEMENTS in ADMINISTRATION of MILITARY JUSTICE, furnished by MR. CLODE, Solicitor to the War Department.

A.

CORRESPONDENCE CONCERNING IMPROVEMENTS IN THE ADMINISTRATION OF MILITARY JUSTICE.

No. 1.

Judge Advocate-General's Office,
MY LORD, May 5, 1864.

I HAVE the honour to transmit herewith a copy of certain resolutions, concerning improvements in the administration of military justice, agreed to at a meeting at which His Royal Highness the Field Marshal Commanding-in-Chief and your Lordship were present.

I have, &c.
(Signed) THOS. E. HEADLAM.

The Right Hon.
the Earl de Grey and Ripon.

No. 2.

MEMORANDUM of PROPOSITIONS agreed to at a meeting held at the War Office on the 13th day of April 1864, on the subject of improving the administration of justice by courts-martial.

It was agreed,—

1. That no change is necessary in the constitution or jurisdiction of regimental courts-martial.

2. That no change is necessary in the constitution or jurisdiction of district courts-martial, but that a circular should be issued recommending sentences of longer terms of imprisonment in certain cases in lieu of sentences of penal servitude, and thus in some measure obviating the necessity of summoning general courts-martial and enlarging the number of cases to be submitted to district courts-martial.

3. That the functions of the Judge Advocate-General should remain as at present. That he should frame or sanction charges, and give advice on all points of military law submitted to him. That his department should not be called upon to take part in the actual preparation, conduct, or management of prosecutions, and that for these purposes a solicitor should, in cases of difficulty and importance, be appointed by the Horse Guards.

4. That the powers and duties of the officiating judge advocate at a general court-martial should be increased. That he should maintain an entirely impartial position and act as assessor to the court. That he should give his advice on all matters of law, evidence, or procedure; and, whether consulted or not, interfere to ensure the due formality and legality of the proceedings. That at the conclusion of the case he should sum up the evidence, and give his opinion upon the law before the court proceeds to deliberate upon its finding.

5. That the officiating judge advocate at a general court-martial should represent the Judge Advocate-General, should be deputed by him, and, if possible, be selected either from officers who have passed an examination in military law or from barristers, it being understood that when council are employed either for the defence or for the prosecution, the officiating judge advocate should be a barrister.

6. That the president of a general court-martial should be allowed, with the sanction of the Secretary of State for War, to employ a shorthand writer to make the official record, and that (if necessary) powers for this purpose should be inserted in the Mutiny Act.

7. That the Commander-in-Chief should consider the propriety of reducing the number of members requisite to constitute a general court-martial from 13 to any lesser number.

8. That the Commander-in-Chief and the Judge Advocate-General should draw up a scheme for bringing the Judge Advocate-General's department in India into connexion with and subordination to the Judge Advocate-General's department at home, and that this scheme should be communicated by the Secretary of State for War to the Secretary of State for India for his consideration.

No. 3.

SIR, War Office, May 10, 1864.

I AM directed by the Secretary of State for War to transmit to you the accompanying copy of certain resolutions, concerning improvements in the administration of military justice, agreed to at a meeting at which the Field Marshal Commanding-in-Chief and Earl de Grey were present.

Earl de Grey will be glad if His Royal Highness will after consultation with the Judge Advocate-General, point out to his Lordship what steps His Royal Highness would propose to take in order to carry out the arrangements sketched out in this memorandum.

I have, &c.
(Signed) EDWARD LUGARD.

The Military Secretary.

See Enclosure in No. 12 post.

No. 4.

SIR, Horse Guards, July 9, 1864.

I AM directed by the Field Marshal Commanding-in-Chief to forward to you, for the concurrence of the Secretary of State for War, the enclosed circular, which His Royal Highness proposes shall be addressed to general officers, on the subject of the amount of punishment to be awarded by district courts-martial.

I have, &c.
(Signed) J. YORKE SCARLETT, A.G.

The Under Secretary of State,
War Office.

No. 5.

SIR, War Office, July 28, 1864.

I HAVE laid before the Secretary of State for War your letter of the 9th instant, enclosing the draft of a circular which the Field Marshal Commanding-in-Chief proposes shall be addressed to general and other officers commanding at home and abroad on the subject of the amount of punishment to be awarded by district courts-martial.

In reply, I am to request that you will signify to His Royal Highness Earl de Grey's concurrence in the terms of the proposed instruction.

I have, &c.
(Signed) EDWARD LUGARD.

The Adjutant-General.
&c. &c. &c.

No. 6.

SIR, Horse Guards, August 5, 1864.

WITH reference to your letter of the 10th May, containing copy of certain resolutions concerning improvements in the administration of military justice agreed to at a meeting held at the War Office on the 13th April last, and to the communication which it is understood the Judge Advocates-General has had with the Secretary of State for War on the subject of appointing three officers to act as deputy officiating judge advocates for general courts-martial in England and Ireland, in furtherance of the above measure, I am directed by the Field Marshal Commanding-in-Chief to request you will acquaint Earl de Grey that, with the view of carrying out this arrangement, His Royal Highness would propose that three officers, not below the rank of field officer, should be appointed to act as deputy judge advocates, and be stationed in London, Manchester, and Dublin, with the pay allowances and status of assistant adjutant-general.

The appointments to be considered qualifying with reference to the requirements of the 8th and 27th clauses of the warrant of 14th October 1858.

So soon as Earl de Grey's concurrence shall have been received to this proposal, His Royal Highness will be prepared to nominate three officers for the appointments above named.

I have, &c.
(Signed) W. F. FORSTER.

The Under Secretary of State
for War.

No. 7.

SIR, Horse Guards, October 10, 1864.

WITH reference to my letter of the 5th August last, regarding the appointment of three officers to act as deputy officiating judge advocates for general courts-martial in England and Ireland, in furtherance of the measures proposed for improving the administration of military justice, I am directed by the Field Marshal Commanding-in-Chief to request you will acquaint the Secretary of State for War that His Royal Highness is of opinion that it would be very desirable that the three appointments above mentioned should be made as soon as possible, in order that the new system may at once be organized, and His Royal Highness trusts therefore that Earl de Grey will see no objection in concurring in this proposal.

I have, &c.
(Signed) W. F. FORSTER.

The Under Secretary of State,
War Office.

No. 8.

SIR, War Office, October 12, 1864.

IN reply to your letter of the 10th instant, I am directed by the Secretary of State for War to request that you will acquaint the Field Marshal Commanding-in-Chief that, before deciding upon the proposal made by His Royal Highness as to the appointment of three field officers to act as deputy judge advocates in London, Manchester, and Dublin, which would require Treasury sanction and provision in the Army Estimates, Earl de Grey would wish to be favoured with the views of His Royal Highness on the several points referred to by the Judge Advocate-General in his memorandum which accompanied my letter of 10th May last.

I have, &c.
(Signed) EDWARD LUGARD.

The Military Secretary.

No. 9.

SIR, Horse Guards, October 17, 1864.

WITH reference to your letter of the 12th instant, stating that before deciding upon the proposed appointment of three field officers to act as deputy judge advocates, the Secretary of State for War would wish to be favoured with the views of His Royal Highness on the several points referred to by the Judge Advocate-General in the memorandum which accompanied your letter of the 10th May last, I am directed to transmit herewith, for Earl de Grey's information, a copy of the memorandum in question with the joint remarks of His Royal Highness the Field Marshal Commanding-in-Chief and the Adjutant-General thereon, and to state, that arrangements are in progress for carrying out the measure, as far as practicable, in accordance therewith, the result of which will be communicated to you as soon as possible, though His Royal Highness was desirous that the three appointments above alluded to should take place at once, as stated in my letter of the 10th instant.

I have, &c.
(Signed) W. F. FORSTER.

The Under Secretary of State,
War Office.

No. 10.—Enclosure in No. 9.

MEMORANDUM of propositions agreed to at a meeting held at the War Office on the 13th day of April 1864, on the subject of improving the administration of justice by courts-martial.	Remarks by Lieut.-Gen. the Hon. Sir J. Y. Scarlett, G.C.B., the Adjutant-General.	Remarks by H. R. H. the Field Marshal Commanding-in-Chief.
It was agreed:—		
1. That no change is necessary in the constitution or jurisdiction of regimental courts-martial.	——	1. Certainly.
2. That no change is necessary in the constitution or jurisdiction of district courts-martial, but that a circular should be issued recommending sentences of longer terms of imprisonment in certain cases, in lieu of sentences of penal servitude, and thus in some measure obviating the necessity of summoning general courts-martial and enlarging the number of cases to be submitted to district courts-martial.	2. This can be done by confidential letter to general officers commanding on stations, and an alteration in next addition, Queen's Regulations.	2. This must be carried out by circular.
3. That the functions of the Judge Advocate-General should remain as at present. That he should frame or sanction charges, and give advice on all points of military law submitted to him. That his department should not be called upon to take part in actual preparation, conduct, or management of prosecutions, and that for these purposes a solicitor should, in cases of difficulty and importance, be appointed by the Horse Guards.	3. This does not require any action in the way of order or circular, but would be acted on as the cases occurred.	3. A minute to this effect should be carefully drawn up by the Judge Advocate-General, approved of by the Secretary of State and Commander-in-Chief, and a copy deposited at each of the three offices. It will be necessary to send a copy to every Command for the guidance of the General Officer.
4. That the powers and duties of the officiating Judge Advocate at a general court-martial should be increased. That he should maintain an entirely impartial position and act as assessor to the court. That he should give his advice on all matters of law, evidence, or procedure, and whether consulted or not, interfere to ensure the due legality and formality of the proceedings. That at the conclusion of the case he should sum up the evidence, and give his opinion upon the law before the court proceeds to deliberate upon its finding.	4. This might be embodied in a letter of direction from the Judge Advocate-General to the deputy appointed, a copy of which should be given to the president and court.	4. These Regulations should be embodied in the above Minute.
5. That the officiating Judge Advocate at a general court-martial should represent the Judge Advocate-General, should be deputed by him, and if possible be selected either from officers who have passed an examination in military law, or from barristers, it being understood that when counsel are employed, either for the defence or for the prosecution, the officiating Judge Advocate should be a barrister.	5. An officer who has passed the Staff College would be named as Judge Advocate-General for approval, to whom he would give the directions before-mentioned as to his duties.	5. The same as above.
6. That the President of a general court-martial should be allowed, with the sanction of the Secretary of State for War, to employ a shorthand writer to make the official record, and that if necessary, powers for this purpose should be inserted in the Mutiny Act.	6. This would be made known to the President on appointment.	6. The same as above.
7. That the Commander-in-Chief should consider the propriety of reducing the number of members requisite to constitute a general court-martial from thirteen to any lesser number.	7. This, if thought proper, would require an alteration in the Mutiny Act. As the number of general courts-martial would be diminished by resorting to district court-martial it would be the less necessary.	——
8. That the Commander-in-Chief and the Judge Advocate-General should draw up a scheme for bringing the Judge Advocate-General's department in India into connexion with and in subordination to the Judge Advocate-General's department at home; and that this scheme should be communicated by the Secretary of State for War to the Secretary of State for India, for his consideration.	8. This paragraph requires further interview and discussion.	8. This must be done by the Judge Advocate-General in concurrence with the Secretaries of State for War and India, and the Commander-in-Chief.

No. 11.

SIR, War Office, November 8, 1864.

WITH reference to the second paragraph of the memorandum which accompanied your letter of the 17th ultimo, in which it is proposed that a circular should be issued recommending sentences of longer terms of imprisonment in certain cases in lieu of sentences of penal servitude, I am directed by the Secretary of State for War to request that you will signify to His

Royal Highness the Field Marshal Commanding-in-Chief Earl de Grey's request to be informed:—

1. What is the maximum length of the sentences of imprisonment now pronounced by district courts-martial?
2. What is the maximum length which His Royal Highness would propose?

I have, &c.
(Signed) EDWARD LUGARD.

The Military Secretary,
&c. &c. &c.

No. 12.

SIR, Horse Guards, November 11, 1864.

HAVING submitted to the Field Marshal Commanding-in-Chief your letter of the 8th instant, on the subject of the proposed improvement in the administration of military justice, I am directed to request you will acquaint the Secretary of State for War, that although the Mutiny Act and Articles of War fix no limit to the powers of district courts-martial as regards the award of imprisonment, yet, by the "Queen's Regulations," the maximum term of imprisonment which such a tribunal could adjudge is limited to six months.

His Royal Highness, however, being of opinion that there were but few crimes committed by soldiers which could not be dealt with by district courts-martial, provided they were empowered to award longer terms of punishment, has submitted to the Queen and Her Majesty has been pleased to approve of district courts-martial being authorized to inflict in very grave cases any term of imprisonment not exceeding two years.

His Royal Highness has accordingly caused Her Majesty's commands to be confidentially made known to the general and other officers commanding on stations at home and abroad in a circular letter, copy of which is herewith enclosed for Earl de Grey's information.

I have, &c.
(Signed) F. W. FORSTER.

The Under Secretary of
State for War.

Enclosure in No. 12.

CONFIDENTIAL CIRCULAR LETTER to General and other Officers commanding on Stations at home and abroad.

SIR, Horse Guards, 20th October 1864.

HIS Royal Highness the Field Marshal Commanding-in-Chief having had under his consideration the working of general and district courts-martial, has come to the conclusion that there are but few crimes committed by soldiers which cannot effectually be dealt with by district courts-martial, provided the restriction which is now laid upon them by the Queen's Regulations not to inflict more than six months' imprisonment be modified.

It is therefore Her Majesty's pleasure that such restriction shall be so far modified that a district court-martial shall henceforth be empowered, in very grave cases, to inflict any term of imprisonment not exceeding two years, with hard labour and solitary confinement in the proportions already laid down.

In addition a district court-martial will as heretofore have the power to recommend dismissal with ignominy, and the marking the delinquent with the letters B.C. or D.

These powers extended to district courts-martial it is considered will be ample for the maintenance of discipline among non-commissioned officers and privates, without resorting to the higher tribunal of a general court-martial, except in cases so aggravated as to seem to require the punishment of death or of penal servitude.

His Royal Highness directs that you will be pleased to make these orders, as sanctioned by Her Majesty, known in the district under your command for the guidance of the president and members of such courts-martial as may be convened by your authority.

I have the honour to be,
Sir,
Your obedient servant,
J. YORKE SCARLETT,
Adjutant-General.

No. 13.

SIR, Horse Guards, January 23, 1865.

ADVERTING to the resolution on the subject of improving the administration of military justice by court-martial, agreed to at a meeting held at the War Office on the 13th April last year, and to the several recommendations which have taken place since that time regarding the much-to-be-desired improvement in conducting the proceedings of courts-martial, I am directed by the Field Marshal Commanding-in-Chief to request you will remind the Secretary of State for War that, after communication with the Judge Advocate-General, it was finally arranged to propose that three field officers should be selected for the appointment of deputy judge advocates to be stationed in London, Dublin, and Manchester; and although some of the clauses in the memorandum which accompanied your letter of the 10th May last have not yet been carried out (being still under the consideration of the Judge Advocate-General), His Royal Highness is of opinion that much benefit would accrue to the service, and probably great inconveniences which have been experienced by the difficulty of finding regimental officers properly qualified be prevented, by the three above-named appointments, for which officers will be specially selected.

It is His Royal Highness' intention to propose that the administration of military law should in future form a portion of the studies at the Staff College; but at the present time he will be able to avail himself of the services of officers who have had much experience in such matters, and whose early appointments His Royal Highness would therefore urge, in order that they may lose no time in making themselves thoroughly competent for the office of deputy judge advocate.

I have, &c.
(Signed) W. J. FORSTER.

The Under Secretary of
State for War.

No. 14.

Judge Advocate-General's Office,

MY LORD, January 23, 1865.

I HAVE the honour to submit the following scheme for the education of gentlemen who may hereafter be desirous of proving that they are qualified to act as deputy judge advocates.

Mutiny Act.
Articles of War.
Stephen on Criminal Law.
Taylor on Evidence (chapters on witnesses).
Simmons on Courts-martial.

I have, &c.
(Signed) THOS. E. HEADLAM.

The Right Hon. the Secretary
of State for War.

No. 15.

Judge Advocate-General's Office,

MY LORD, January 27, 1865.

1. YOUR Lordship will recollect that at a meeting held at the War Office on the 13th of April 1864, on the subject of improving the administration of justice by courts-martial, at which His Royal Highness the Field Marshal Commanding-in-Chief, your Lordship, and many officers of great experience and distinction were present, it was among other things unanimously agreed.

2. "That the powers and duties of the officiating judge advocate at a general court-martial should be increased. That he should maintain an entirely impartial position, and act as assessor to the court. That he should give his advice on all matters of law, evidence, or procedure, and, whether consulted or not, interfere to insure the due formality and legality of the proceedings. That at the conclusion of the case he should sum up the evidence, and give his opinion upon the law before the court proceeds to deliberate upon its finding."

3. That the officiating judge advocate at a general court-martial should represent the Judge Advocate-General, should be deputed by him, and if possible, be selected either from officers who have passed an examination in military law or from barristers, it being understood that when council are employed, either for the defence or for the prosecution, the officiating judge advocate should be a barrister."

4. I have since had under my consideration the

manner in which the above resolutions can be best carried out, and I have now the honour to submit to your Lordship the following suggestions.

5. The number of such standing deputy judge advocates, and the local areas within which they shall severally discharge their duties, must be determined by the military authorities.

6. Their appointment, I am clearly of opinion, must be by deputation from the Judge Advocate-General for the time being, whom they will represent, under whose immediate direction they will always act, and to whom they must be immediately responsible. Their tenure of office, I think, should be for a period of five years, subject however to re-appointment, and subject also to removal before the expiration of that period, if the Judge Advocate-General for the time being should think such removal desirable.

7. Such deputy judge advocates must in the first instance be selected from officers who there is reason to suppose are best qualified to discharge the important duties that will devolve upon them. I have already submitted to your Lordship a scheme of education for officers desirous to qualify themselves for such offices in future, and I would suggest that hereafter, when due time has been given for candidates to prepare themselves, no one shall be appointed to the office in question without undergoing a satisfactory examination in the specified subjects.

8. As to the duties of such deputy judge advocates, they are I think almost sufficiently set forth in the resolution quoted in the early part of this letter; I only wish to add to the points there stated that the opinion of the deputy judge advocate ought to be conclusive upon any point of law or procedure which arises upon a trial at which he officially attends, whether he has or has not an opportunity of consulting the Judge Advocate-General before a decision is made. He should be responsible to the Judge Advocate-General for a proper record of the proceedings; but in important cases he should be assisted in the discharge of this duty by a sworn shorthand writer. In all cases when a prisoner is undefended he should take care that such prisoner should not lose any privilege that the law allows him in the conduct of the trial.

9. The seat of the deputy judge advocate, I conceive, should be at the right hand of the president of the court. He should take no part in the conduct of the prosecution, but in other respects should fulfil the duties now cast upon deputy judge advocates.

I have, &c.
(Signed) THOS. E. HEADLAM.

The Right Hon. the Earl de Grey
and Ripon,
&c. &c. &c.

No. 16.

SIR, War Office, January 30, 1865.

WITH reference to letter of the 23rd inst., and the previous correspondence relative to the measures to be adopted for the improvement of military justice by courts-martial, I am directed by the Secretary of State for War to transmit to you, for the consideration of the Field Marshal Commanding-in-Chief, the accompanying letter from the Judge Advocate-General on the subject.

Earl de Grey will be glad to be informed, at your earliest convenience, whether His Royal Highness concurs generally in the views of Mr. Headlam, and, if so, what pay and relative position he would propose to assign to the three field officers whom his Lordship learns from your letter of the 23rd inst. that it is proposed by His Royal Highness to be selected for the appointment of deputy judge advocate.

I have, &c.
(Signed) EDWARD LUGARD.

The Military Secretary,
&c. &c. &c.

No. 17.

SIR, Horse Guards, January 30, 1865.

I HAVE laid before the Field Marshal Commanding-in-Chief your letter of the 30th inst., with its enclosures from the Judge Advocate-General relative to the measures to be adopted for the improvement of military justice by courts-martial, and I am directed to request you will inform the Secretary of State for War that His Royal Highness concurs generally in the views of Mr. Headlam, with the exception of the removal of an officer from the position of deputy judge advocate, as stated in the latter part of clause 6 of the letter herewith returned; His Royal Highness being of opinion that such removal should not take place without the concurrence of the Field Marshal Commanding-in-Chief.

His Royal Highness adheres to the proposal made in my letter of the 5th August last, that "three officers, "not below the rank of field officer, should be appointed "to act as deputy judge advocates, and be stationed in "London, Manchester, and Dublin, with the pay, "allowances, and status of assistant adjutant-general. "The appointments to be considered qualifying with "reference to the requirements of the 8th and 27th "clauses of the warrant of 14th October 1858."

I have to add that, for the reasons stated in my letter of the 23rd inst., His Royal Highness is desirous that the three appointments in question should be made as soon as possible.

I have, &c.
(Signed) W. F. FORSTER.

The Under Secretary of State,
War Office.

No. 18.

SIR, War Office, February 6, 1865.

THE Lords Commissioners of the Treasury are aware that the system under which military justice is administered by general courts-martial has recently occupied the attention of Parliament on several occasions, and that an assurance was given in both Houses during its last session that the subject would be carefully inquired into by Her Majesty's Government with a view to determine the nature of the improvements required.

The subject has accordingly received very full consideration at the hands of the Secretary of State for War, acting in concert with His Royal Highness the Field Marshal Commanding-in-Chief and the Judge Advocate-General.

I am to request that you will submit, for their Lordships' information, the following as being an outline of the measure finally agreed upon.

The powers and duties of the officiating judge advocate at a general court-martial are to be increased. He is to maintain an entirely impartial position, and act as assessor to the court. He is to give his advice on all matters of law, evidence, or procedure, and, whether consulted or not, interfere to ensure the due formality and legality of the proceedings. At the conclusion of the case he is to sum up the evidence and give his opinion upon the law before the court proceeds to deliberate upon its finding.

It is proposed that three officers with the rank of field officers shall be appointed to act as deputy judge advocates, and be stationed in London, Manchester, and Dublin, with the pay, allowances, and status of assistant adjutant-general. Their appointment will be by deputation from the Judge Advocate-General for the time being, whom they will represent, under whose immediate direction they will always act, and to whom they will be immediately responsible. Their tenure of office will be for a period of five years, subject however to re-appointment, and subject also to removal before the expiration of that period if the Judge Advocate-General for the time being should, in concurrence with the Field Marshal Commanding-in-Chief, think such removal desirable.

In the first instance these officers will be selected by the adjutant-general after consultation with the Field Marshal Commanding-in-Chief, but hereafter, when the necessary arrangements shall have been made, it will be required that all officers appointed to these posts shall have passed, in addition to the other qualifications required for staff officers, a special examination in military law and the general principles of jurisprudence.

The additional expense involved in these three appointments will amount to about 1,000*l.* per annum over and above the half-pay of the officers; and I am to request that you will acquaint the Lords Commissioners that Lord de Grey considers it highly important that this sum should be included in the estimates for the ensuing year under the vote for administration of martial law, together with an item of 300*l.* for travelling expenses, which is probably somewhat in excess of the charge incurred on this account under the present system; and he trusts, therefore, that their

Lordships will give their early sanction to these arrangements.

I have, &c.
(Signed) Edward Lugard.

The Assistant Secretary to
the Treasury.

No. 19.

Sir, Horse Guards, April 12, 1865.

By direction of the Field Marshal Commanding-in-Chief, I have the honour to transmit, for the consideration of the Secretary of State for War, an order proposed to be issued, relative to the deputy judge advocates-general recently created.

I have, &c.
(Signed) W. F. Forster.

The Under Secretary of State
for War.

Enclosure in No. 19.

Proposed Order to be submitted to the Judge Advocate-General, and to the Secretary for War for his approval, relative to the Deputy Judge Advocates-General recently created.

His Royal Highness the Field Marshal Commanding-in-Chief, with the concurrence of the Secretary of State for War, and with the approval of the Judge Advocate-General, has been pleased to appoint the following officers to act as deputy judge advocate-general for the districts named:—

For the Home, South-western, and Western districts, to be stationed in London, Brevet-Colonel Laye, unattached; for the Northern and North Britain, to be stationed at Manchester, Colonel Mein, unattached; for Ireland, to be stationed at Dublin, Colonel Nugent, unattached.

The duties to be performed by these officers will be to attend all general courts-martial ordered to be assembled in the districts for which they are appointed, under the instructions of the Judge Advocate-General, a copy of which will be laid by them before the president of the court.

As regards district courts-martial, the presidents of such courts, after their confirmation by the general officer or other authorized officer of the district, will forward them to the deputy judge advocate-general of the district, by whom, after perusal, they will be forwarded to the Judge Advocate-General.

Should the deputy judge advocate-general of the district have reason to doubt the legality of any sentence, or see in the proceedings anything whereby he believes them to be invalid, he will at once communicate with the confirming officer, with a view to a suspension of the sentence awarded till the opinion of the Judge Advocate-General has been obtained by the deputy, who will without delay communicate it to the general or other confirming officer for his guidance.

No. 20.

Sir, War Office, April 20, 1865.

With reference to your letter of the 27th January last, and the subsequent correspondence relative to the arrangements to be made for the administration of justice by courts-martial, I am directed by the Secretary of State for War to transmit for your consideration the enclosed copy of an order which His Royal Highness the Field Marshal Commanding-in-Chief proposes to issue on the subject.

Earl de Grey will be glad to be informed whether you concur in this proposed order or have any observations to offer upon it.

I have, &c.
(Signed) Edward Lugard.

To the Judge Advocate-General,
&c. &c. &c.

No. 21.

Sir, Judge Advocate-General's Office.

In answer to your letter of the 20th instant, I have the honour to forward, for the information of the Secretary of State for War, a copy of a letter I have addressed to the adjutant-general, which will sufficiently explain my views on the subject to which it relates.

I have, &c.
(Signed) Thos. S. Headlam.

To Sir E. Lugard, K.C.B.,
&c. &c. &c.

No. 22.—Enclosure of No. 21.

1865, April 25.—The Judge Advocate-General to the Adjutant-General.

With reference to your letter of the 20th instant, concerning the form of an order for the appointment of the deputy judge advocates under the recent change that has taken place, I have the honour to submit the following observations:—

The deputy judge advocate at every trial has, up to the present time, uniformly been appointed by the Judge Advocate-General, whom he represents, and who is responsible for his conduct.

I forward herewith the ordinary form that has been in use in this office for many years for the appointment of a deputy judge advocate at courts-martial.

The only change that has recently taken place is, that the same officer is now to act as deputy judge advocate at every general court-martial that occurs in a particular district. Instead, therefore, of receiving an appointment from the Judge Advocate-General for one particular case, he will now require an appointment in a more general form.

Some years ago a deputy judge advocate in Dublin was appointed by the Judge Advocate-General to act at all the general courts-martial that occurred in Ireland. His position was similar to that now occupied by Colonel Nugent.

I forward the form of appointment that was used for Mr. Walker, the deputy judge advocate for Ireland, which bears date the 12th June 1849.

I also forward the form I used upon the appointment of Colonel Nugent in Ireland.

It appears to me, therefore, that the deputy judge advocates should continue to receive their appointments from the Judge Advocate-General alone.

With reference to the concluding portion of the suggested order, I think it is open to doubt whether the deputy judge advocate should, before he submits his objection to the Judge Advocate-General, communicate with the confirming officer of a district court-martial; such a regulation might undoubtedly be convenient when the district court-martial was held in one of the colonies, but at home I think it would be better that the deputy judge advocate should in the first instance submit his observations to the Judge Advocate-General.

I am, however, clearly of opinion that instructions of this kind should be issued from the Judge Advocate-General himself from time to time, in the form that might be found most convenient, and most calculated to secure uniform administration of justice in the army.

No. 23.—Enclosure of No. 22.

By , Judge Advocate-General of
Her Majesty's Forces, to .

By virtue of the power and authority to me given by Her Majesty, I do hereby appoint you the said , to act as deputy judge advocate at a general court-martial to be holden for the trial of .

Given under my hand and seal this day of in the year of Her Majesty's reign.

No. 24.—Enclosure of No. 22.

By the Right Hon. Sir David Dundas, Judge Advocate-General of Her Majesty's Forces, to David Walker, Esq.

By virtue of the power and authority to me given by Her Majesty, I do hereby appoint you the said David Walker to act as deputy judge advocate-general at all trials by general courts-martial, and in all matters appertaining to that office which shall concern any of Her Majesty's land forces from time to time serving in that part of the United Kingdom called Ireland, pursuant to an Act of Parliament now in force, intituled "An Act for punishing Mutiny and Desertion, and for "the better Payment of the Army and their Quarters,"

or any other Act of Parliament in that behalf which shall hereafter be in force, and to such Articles of War as shall from time to time be established by Her Majesty during the continuance of the power and authority hereby given to you to act as aforesaid.

Given under my hand and seal this Twelfth day of June 1849, in the twelfth year of Her Majesty's reign.

(Signed) DAVID DUNDAS.

No. 25.—Enclosure of No. 22.

By the Right Hon. THOMAS EMERSON HEADLAM, M.P., Judge Advocate-General of Her Majesty's Forces, to Colonel CHARLES L. NUGENT.

BY virtue of the power and authority to me given by Her Majesty, and by virtue of all other powers and authorities to me on that behalf given by any Act of Parliament now in force, or hereafter to come in force, I do hereby appoint you the said Colonel Charles L. Nugent to act as deputy judge advocate at all trials by general courts-martial, and in all matters appertaining to that office which shall concern any of Her Majesty's land forces from time to time serving in that part of the United Kingdom called Ireland.

Given under my hand and seal this First day of April in the twenty-eighth year of Her Majesty's reign.

(Signed) THOS. E. HEADLAM.

No. 26.

SIR, War Office, April 29, 1865.

I HAVE laid before the Secretary of State for War your letter of the 12th inst., enclosing the draft of an order which it is proposed to issue relative to the deputy judge advocates recently created.

In returning this paper I am to request that you will suggest to His Royal Highness the Field Marshal Commanding-in-Chief that the order should be amended in conformity with the views of the Judge Advocate-General communicated to you in Mr. Headlam's letter of the 25th inst.

I have, &c.

(Signed) EDWARD LUGARD.

The Adjutant-General,
&c. &c. &c.

No. 27.

SIR, Horse Guards, S.W., June 24, 1865.

I AM desired by His Royal Highness the Field Marshal Commanding-in-Chief to transmit for your information and guidance the enclosed memorandum, in which the powers and duties of the newly-created deputy judge advocates are defined, a copy of which is to be laid before all presidents of general and district courts-martial.

I have, &c.

(Signed) J. YORKE SCARLETT,
A.G.

The Officer Commanding at

No. 28.—Enclosure of No. 27.

MEMORANDUM to be laid before the Presidents of all General or District Courts-martial.

1. THE deputy judge advocate at a general court-martial should maintain an entirely impartial position and act as assessor to the court.

2. He should give his advice on all matters of law, evidence, or procedure, and, whether consulted or not, interfere to ensure the due formality and legality of the proceedings.

3. At the conclusion of the case he should sum up the evidence and give his opinion upon the law before the court proceeds to deliberate upon its finding.

4. The officiating judge advocate at a general court-martial should represent the Judge Advocate-General, should be deputed by him, and, if possible, be selected either from officers who have passed an examination in military law or from barristers, it being understood that when counsel are employed, either for the defence or for the prosecution, the officiating judge advocate should be a barrister.

5. The opinion of the deputy judge advocate ought to be conclusive upon any point of law or procedure which arises upon a trial at which he officially attends, whether he has or has not an opportunity of consulting the Judge Advocate-General before a decision is made.

6. He should be responsible to the Judge Advocate-General for a proper record of the proceedings; but in important cases, he should be assisted in the discharge of his duty by a sworn shorthand writer.

7. In all cases when a prisoner is undefended, he should take care that such prisoner should not lose any privilege that the law allows him in the conduct of the trial.

8. The seat and table of the deputy judge advocate should be at the right of the president of the court.

9. He should take no part in the conduct of the prosecution, but in other respects should fulfil the duties now cast upon deputy judge advocates.

10. With respect to district court-martial the presidents are to be instructed to forward them as ordered by the Articles of War to the Judge Advocate-General, but under cover to the deputy judge advocate of the district, who will read them, and draw the immediate attention of the Judge Advocate-General to anything requiring notice in the proceedings.

(Signed) J. YORKE SCARLETT,
A.G.

No. 29.

CIRCULAR MEMORANDUM addressed to the Army at Home and Abroad.

Horse Guards, S.W., 18th June 1866.

General No. 379. Courts-Martial 2—(1866).

THE instructions issued from this office in June 1865, relative to the powers and dutes of the newly-created deputy judge advocates, having been recalled, and an amended memorandum upon this subject substituted for them, His Royal Highness the Field Marshal Commanding-in-Chief directs that the latter shall be laid before all presidents of general and district courts-martial for their information and guidance, and strictly adhered to in future.

A copy of the amended instructions is annexed.

By Command,
WILLIAM PAULET,
Adjutant-General.

No. 30.

MEMORANDUM to be laid before the Presidents of all General or District Courts-martial.

The deputy judge advocate at a general court-martial should maintain an entirely impartial position, and act as assessor to the court.

He should give his advice on all matters of law, evidence, or procedure; and, whether consulted or not, interfere to ensure the due formality and legality of the proceedings.

At the conclusion of the case he should sum up the evidence and give his opinion upon the law before the court proceeds to deliberate upon its finding.

The opinion of the deputy judge advocate ought to be conclusive upon any point of law or procedure which arises upon a trial at which he officially attends, whether he has or has not an opportunity of consulting the Judge Advocate-General before a decision is made.

He should be responsible to the Judge Advocate-General for a proper record of the proceedings; but, in important cases, he should be assisted in the discharge of this duty by a sworn shorthand writer.

In all cases where a prisoner is undefended he should take care that such prisoner should not lose any privilege that the law allows him in the conduct of the trial.

The seat and table of the deputy judge advocate should be at the right of the president of the court.

He should take no part in the conduct of the prosecution, but in other respects should fulfil the duties now cast upon deputy judge advocates.

With respect to district courts-martial, the presidents are to be instructed to forward the proceedings, as ordered by the Articles of War, to the Judge Advocate-General, but under cover to the deputy judge advocate of the district, who will read them, and draw the attention of the Judge Advocate-General to anything requiring notice in the proceedings.

WILLIAM PAULET,
Adjutant-General.

No. 31.

SIR, War Office, July 31, 1866.

I AM directed by Secretary Lieutenant-General Peel to acquaint you that he has observed, on referring to the instructions relative to the powers and duties of

deputy judge advocates enclosed in the Circular Memorandum from the Horse Guards dated 18th June, General No. 379, the omission of paragraph 4 of the former instructions on the subject.

Lieutenant-General Peel does not question the propriety of this omission (though it should not have been made under the circumstances without reference to this department); but he desires me to request that you will move His Royal Highness the Field Marshal Commanding-in-Chief to favour him with an explanation of the circumstances which led to the necessity for cancelling the former circular, which had received the sanction of the Secretary of State, and issuing an amended one.

I have, &c.

The Adjutant-General, &c. &c. &c. (Signed) EDWARD LUGARD.

No. 32.

SIR, Horse Guards, August 7, 1866.

WITH reference to your letter of the 31st ultimo, addressed to the Adjutant-General, stating that on referring to the instructions relative to the powers and duties of deputy judge advocates in the Horse Guards Circular Memorandum of 18th June last, Lieutenant-General Peel has observed the omission of paragraph 4 of the former instructions on the subject, and requesting to be favoured with an explanation of the circumstances which led to the necessity for cancelling the former circular, I am directed by the Field Marshal Commanding-in-Chief to acquaint you, for the information of the Secretary of State for War, that as the effect of the paragraph in question might have been to supersede the military deputy judge advocate by a civilian, which it was considered would be attended with inconvenience to the service; it was decided, upon the suggestion of the Judge Advocate-General, that that paragraph should be entirely omitted. The new circular was accordingly issued with that modification, and His Royal Highness can only express his regret that, owing to an oversight, the concurrence of the Secretary of State was not first obtained to its publication.

I enclose herewith the extracts of the letters which passed between the Judge Advocate-General and this department on the above subject.

I have &c.

The Under Secretary of State for War. (Signed) W. F. FORSTER.

Enclosure of No. 32.

The MILITARY SECRETARY to the JUDGE ADVOCATE-GENERAL.

I AM directed to take this opportunity of calling your attention to the fourth paragraph of the Circular Memorandum of 16th June 1865, alluded to in your letter, under acknowledgment for which His Royal Highness proposes to substitute the following: — "That the "military deputy judge advocate should, in all cases of a "general court-martial when counsel is employed either "for the defence or prosecution, conduct the proceed-"ings and be assisted by a barrister," as the effect of the present paragraph would be to supersede the military deputy judge advocate by a civilian, which His Royal Highness is of opinion would be attended with inconvenience to the service.

Enclosure of No. 32.

The JUDGE ADVOCATE-GENERAL to the MILITARY SECRETARY.

WITH respect to the Circular Memorandum of the 16th June 1865, I concur with you that it is generally advisable that when a barrister is employed he should assist and not supersede the military deputy judge advocate, and I have acted upon this principle in the recent cases in Ireland; but there is some objection, I think, to a new memorandum being issued containing anything at variance with the resolutions which led to the recent changes. It would be better in the proposed new memorandum to omit altogether the fourth paragraph of the present one, as it is not in any way wanted for the guidance of presidents of courts-martial.

B.

MEMORANDUM AS TO THE EMPLOYMENT OF LEGAL AGENTS IN THE CONDUCT OF PROCEEDINGS BEFORE COURTS-MARTIAL.

BEFORE a new practice is adopted with the authority of the Secretary of State of employing members of the legal profession to conduct the prosecution or the defence of an accused officer or soldier before a court-martial, due consideration should be given, (1.) to its probable effects upon the efficiency of the court, and (2.) to its probable cost to the public and to the accused.

(1.) Until very recently the rule of procedure of courts-martial entirely ignored the presence of legal agents before the court. "Courts-martial being in "general composed of men of ability and discretion, "but who from the nature of their profession and "general mode of life, are not to be supposed versant "in legal subtleties or abstract and sophistical distinc-"tions, and the cases that come before them giving rise "to few questions of law, it has hence been considered "as founded in established usage that counsel or pro-"fessional lawyers are not allowed to interfere in their "proceedings or, by argument or pleading of any kind, "to endeavour to influence either their interlocutory "opinions or find judgment. This is a most wise and "important regulation, nor can anything tend more to "secure the equity and wisdom of their decisions; for "lawyers, being in general as utterly ignorant of "military law and practice as the members of courts-"martial are of civil jurisprudence and the forms of "the ordinary courts, so nothing could result from the "collision of such warring and contradictory judgments "but inextricable embarrassment, or rash, ill-founded, "and illegal decisions.—(Tytler on Military Law, p. 250.)

The principal reason of their exclusion rested on these premises, that these courts have hitherto been held by the highest military authorities to be courts of honour and discipline, rather than courts of criminal procedure or of law. Thus it was that the late Duke of Wellington objected to the great change that had been wrought in the discipline of the army by altering the character of these courts by swearing the witnesses. Speaking before the Commissioners on military punishments in 1836, he said:—

"As far back as 30 years ago there was a very important alteration made, which I do not think was a desirable alteration either for the soldiers or the discipline of the army, which was swearing courts-martial, swearing the witnesses, and swearing the members, and so on. I think it made a very important alteration. It altered the court from what it was before, a court of discipline and honour, into a court with regular evidence and a great deal of perjury, the proof of crime being exceedingly difficult, instead of in the hands of the commanding officer, for which the commanding officer was in a great degree responsible. That alteration was made while I was in the service as commanding officer of a regiment. Then I think that every alteration that has been made since that which has taken away the power of the commanding officer, has rather been a disadvantage, not only to the discipline, but to the soldier himself."

General Sir Charles Napier expressed his view of the question in these emphatic sentences:—"A military "court (he writes) should be a court of honour; it is a "bad system which turns the members that compose it "into attorneys at law . . . . they lose the frank "soldier-like sense of their duty as members of a court-"martial with one grand conscientious duty to perform, "that of acquitting the prisoner against all legal rules "of evidence if they believe in their hearts he is inno-"cent, and condemning him if they conscientiously "believe him to be guilty. In short, the business of "courts-martial is not to discuss points of law, but to "get at the truth by all means in their power."—(Napier on Military Punishment, p. 36.)

A court-martial is a tribunal *sui generis*, and unless it is preserved as such it must fail in the purpose for which it has been created.—(1 Black's Com., p. 842.) The great fundamental principle upon which justice is administered in all the common law courts, viz., that every man shall be tried by his peers, is not recognized in a court-martial, and unless the court is upheld as a court of conscience and honour it may degenerate into evil purposes.

The oath which each member of the court takes marks the peculiar features of the tribunal. He is duly to administer justice according to the Rules and Articles of War without partiality, favour, or affection. If any doubt shall arise, then according to his *conscience*, the best of his understanding, and the *custom of war* in like cases.

"The reading of this oath is therefore abundant to "show" (said Mr. Justice Willes in the recent case of Dawkins *v.* Lord Rokeby) "with respect to all matters "which come under the cognizance of the military tri- "bunals, that they are subject to a test of law which is "different from that administered in civil courts; it is "to be according to military usage and their approval, "whereas here we have a test according to law and the "custom of England, that is to say, the law and custom "which regulate ordinary transactions out of the "army."

If, therefore, the proceedings of courts-martial are to be conducted by professional men trained up in the rules of Westminster Hall, a conflict of authority is to be expected, until in the result these courts are conducted according to the principles, and are made amenable to the authority, of the superior courts at Westminster.

Hitherto the courts at Westminster have refused to interfere with the proceedings of military tribunals, when acting within the limits of military jurisdiction, upon the plain and tenable ground that military men are held to be better qualified to decide upon the rights and to punish the professional irregularities of their own class than any other subjects of Her Majesty; but it will be wholly impossible to sustain this assumption when the proceedings of courts-martial are conducted by legal agents upon what must then be taken to be the admitted incapacity of military men to conduct such proceedings. The superior courts could not refuse to take cognizance of a miscarriage of justice arising from the ignorance or misconduct of their own officers.

The scheme of withdrawing officers from the responsible duties of courts-martial on particular occasions, and filling their places with professional men, has greater disadvantages than that of having these duties always discharged by lawyers, for it creates a rule of inequality in the administration of justice; it would furnish a mode that might be used of unfairly influencing the decisions of any particular court-martial by importing into the tribunal a stranger, without a sufficient guarantee that he either could or would discharge his duty honestly to the accused.

To declare that a court as ordinarily constituted is not competent to discharge its functions is calculated to reduce the authority of its decisions to contempt; and when it is remembered that in foreign countries or in war, and in India in peace, a court-martial has the issues of life and death intrusted to it, such a result would be lamentable.

At present the members of the court exercise their functions under a sense of their legal responsibility to the accused for any mistake in exceeding their powers, but how could such responsibility be enforced against them when such duties are held by the Crown to be beyond the capacity of military men.—(4 Taunton's Report, p. 77.)

(2.) The expenses that have been incurred by the public in the employment of solicitors and counsel in recent courts-martial will be shown in the Appendix.

Adding to the amount of the vote for the administration of martial law may not be a matter of serious importance, but the adoption of a new rule of practice will inflict a pecuniary loss upon the members of the army, which the established rules of military administration precludes them from receiving reimbursement.

A statutory prohibition against the employment of legal agents (similar to the 43 Geo. 3. c. 99. s. 26) might be the best rule to establish.—See Paper C.

CHARLES M. CLODE.

July 1866.

(A.)

SCHEDULE of FEES paid COUNSEL, &c., for attending before COURTS-MARTIAL on TRIALS arising out of FENIAN CONSPIRACY.

1866.		£	s.	d.
March	F. T. L. Dames, Barrister -	84	0	0
,,	S. L. Anderson, Crown Solicitor	63	10	0
May	I. F. Townsend ,, -	220	10	0
June	W. Boyd ,, -	252	0	0
,,	S. L. Anderson ,, -	75	12	0
,,	Geo. Bolton ,, -	23	18	8
,,	C. Tandy, Barrister - - -	63	0	0
,,	W. M. Johnston ,, - - -	63	0	0
,,	S. L. Anderson, Crown Solicitor	18	18	0
,,	C. Tandy, Barrister - - -	94	10	0
,,	W. M. Johnston ,, - - -	94	10	0
,,	S. L. Anderson, Crown Solicitor	28	7	0
August	W. Boyd, Barrister - - -	157	10	0
,,	W. Rian ,, - - -	52	10	0
,,	S. L. Anderson, Crown Solicitor	47	5	0
,,	C. Tandy, Barrister - - -	136	10	0
,,	T. A. Purcell ,, - - -	105	0	0
,,	W. Ryan ,, - - -	10	10	0
,,	S. L. Anderson, Crown Solicitor	40	19	0
		1,631	19	8

(B.)

LIKE FEES paid in COURTS-MARTIAL at JAMAICA, 1866–67, viz.:—

To advising Counsel for the prosecution of Lieut. Cullen and Assistant-Surgeon Morris.	805	0	0
Fees to Counsel of Ensign Cullen	315	0	0
Costs of Messrs. Lewis, Solicitors in same.	397	8	4
Fees to Counsel in Assistant-Surgeon Morris' case.	420	0	0
Costs of Messrs. Lewis, Solicitors in same case.	376	12	0
	£3,946	12	0

HENRY J. WHIFFIN.

C.

PAPERS RELATING TO THE ALLOWANCE OF COSTS, &c. TO OFFICERS ACQUITTED BY COURTS-MARTIAL.

SIR, War Office, February 7, 1824.

I HAVE to acknowledge the receipt of your letter of the 27th ultimo, 138/978/1, inquiring what is the practice of the army as to paying the expenses of witnesses for the defence in military courts-martial, and to acquaint you that there is no fixed regulation on the subject, and that a discretionary judgment is exercised upon each case as it arises and according to its particular circumstances. But the general principle upon the subject is, that when an officer is found guilty of the charges preferred against him he must himself pay the expenses of the witnesses summoned in his defence; that when he is acquitted, if the charges were preferred at the instance of the Crown, those expenses are paid by the public; and if the charges were preferred at the instance of an individual officer, and arose out of personal disputes, those expenses are not borne by the public.

These general rules are, as I have stated, subject to exceptions in particular cases. They have been acted upon for a long course of time, and they seem to stand upon equitable and just grounds.

The officer who is found guilty of the offence charged against him deservedly pays the expense of his insufficient defence; the officer who is charged by the Crown with an offence of which upon trial he is acquitted has a fair claim to be exonerated from the expense of establishing his innocence; and the officer who brings against another an unfounded accusation ought to be made responsible to the acquitted officer for the expenses of his defence in those instances in which the circumstances of the case, as shown by the proceedings, are not such as to entitle the parties concerned to relief from the public.

I have, &c.

J. W. Croker, Esq., &c. &c. Admiralty. (Signed) PALMERSTON.

LIEUTENANT HYDER'S CASE.

Judge Advocate-General's Office,
SIR, Oct. 30, 1845.

I HAVE to acknowledge the receipt of your letter of the 27th ulto., transmitting an application (herewith returned) relative to the expenses incurred by Major Parlby, 4th Dragoons, who, it appears, on reference to the proceedings, attended as a witness for the defence at the trial of Lieut. Hyder, of the 10th Hussars.

Having submitted the same to the Judge Advocate-General, I am desired to acquaint you, for the information of the Secretary at War, that the court assembled on the 1st September and closed its proceedings on the 18th of the same month.

The prisoner was tried for borrowing a horse as his second charger, and acquitted.

The Judge Advocate-General is of opinion that there are not any circumstances in the conduct of the witness that might properly be considered as invalidating his claim to the reimbursement of his expenses.

I have, &c.
(Signed) THOS. NEWMAN ROGERS.

L. Sullivan, Esq.,
&c. &c.

SIR, Great Prescot Street, Nov. 26, 1845.

HAVING been professionally engaged as solicitors for Lieut. Hyder, 10th Hussars, on occasion of the late general court-martial at Leeds, on which occasion he was acquitted of the charge brought against him by Colonel Vandeleur, we are requested on behalf of Lieut. Hyder to ask you to be so obliging as to inform us whether the circumstances of such acquittal do not entitle him to receive from the Government either the whole or some, and what portion, of the expenses incurred in having the professional assistance of Mr. Warren as counsel and ourselves as solicitors in conducting his defence and in payments to witnesses, which expenses amount together (from the trial having lasted nearly three weeks) to more than 600*l*.

We have, &c.
(Signed) RIPPINGHAM & ROSE.

The Hon. Sidney Herbert,
&c. &c.

WILLIAM HYDER, Esq., to RIPPINGHAM & ROSE relating to the Court-martial on Lieut. Hyder.

1845.	£	s.	d.
Aug. Paid travelling and other expenses of journies to Leeds, Prittlewell in Essex, Hounslow, and Hampton Court - - - - -	9	17	6
Sept. Paid travelling expenses to and from Leeds to attend the trial, and twice at York, and cab hire and sundry expenses at Leeds and York -	9	10	0
Paid hotel bill at the "White Horse" at Leeds - - - - -	83	17	3
Paid shorthand writer - - - -	57	13	4
Paid cab hire, messengers, carriage of parcels, postages, and various incidental expenses in London -	2	10	0
Paid Mr. Warren for attending the trial and clerk's fees - - -	255	0	0
Journies to Leeds, Prittlewell, Hounslow, Hampton Court, and York, to see the witnesses and take down their testimony, preparing brief for counsel before and from day to day during the trial; attending the trial at Leeds from the 28th August to the 18th September, and numerous attendances and correspondence - -	225	0	0
Paid by Mr. Hyder to Messrs. Rippingham & Rose - - - -	643	8	1
Paid by Mr. Hyder to Captain Scott, a witness, for his expenses - -	8	1	0
Paid by Mr. Hyder to Major Parlby, Captain Fraser, and Adjutant Lloyd, witnesses, for their expenses -	18	8	0
To be paid to Captain Harrison, a witness, for his expenses - -	22	8	9
	£692	5	10

Lord Palmerston laid down the rule which governs allowances to officers tried by court-martial, viz., that when an officer is found guilty of the charges preferred against him he must himself pay the witnesses summoned in his defence. When acquitted, if the charges are preferred at the instance of the Crown, those expenses are paid by the public, &c. &c.

This has been applied to the payment of the expenses of witnesses, but not to what are termed personal expenses of the officer himself, and no instance can be found of fees to counsel having been paid.

This was explained to the Treasury on the 18th August 1836, in 72,468/10.

Question.

An officer tried by a general court-martial, and honourably acquitted, claims payment of his legal expenses, or in other words costs?

Memorandum by Sir J. Willoughby Gordon.

The principle and practice of general courts-martial is understood to be this, and without any deviation, viz.:—

That neither the prosecutor nor the prisoner is permitted to be publicly assisted by counsel; that no legal adviser is at any time allowed to address the court or to examine a witness; that lawyers are not suffered to interfere publicly in any part of the judicial proceedings of the court, nor is their presence as professional men authorized or acknowledged.

The court-martial permit both the prosecutor and prisoner to have the assistance of their private friends, and to consult with them privately in open court, and under this indulgence it is that lawyers appear as the private friends of the parties, but are never allowed to address the court or to examine a witness.

Neither the prosecutor nor the prisoner can therefore have either a legal or even an equitable claim for the payment of counsel or other individuals whose presence is not publicly sanctioned by the court, and of whose professional assistance the court-martial can take no cognizance.

If this principle be departed from it may be expected that courts-martial will hereafter feel it a part of their duty to notice claims of this description, and proceed to determine and recommend which party shall recover their costs of suit.

But even in the high courts of justice, where prisoners are tried for misdemeanors or crimes affecting their characters and their lives, no allowance in payment of legal expenses is granted to the party acquitted.

None of the men tried for high treason or murder, and acquitted, were (it is presumed) paid by the public for their legal expenses.

If this established principle and usage of general courts-martial be now departed from in favour of an officer, it must be equally extended to the non-commissioned officers and private soldiers throughout every part of Her Majesty's possessions abroad and at home.

Horse Guards, J. W. G.
April 5, 1846.

MEMORANDUM of the SECRETARY AT WAR on the APPLICATION.

I FIND that there is no precedent for paying counsel's fees as part of the legitimate expenses of an officer acquitted by court-martial.

I will not therefore set a precedent which would tend to encourage the practice of employing counsel before courts-martial.

The court does not recognize his presence, for the counsel if employed is not allowed to speak nor to examine; this is clearly put in the accompanying memorandum.

I believe the employment of counsel before a non-legal bench is often mischievous. The employment of a counsel on one side only is still more likely to impede the ends of justice.

In this case, therefore, the counsel's fees should not be paid by the public, nor the expenses of the solicitors.

The remainder of the bill, cost of witnesses, shorthand writer, &c., &c., should be paid.

SIDNEY HERBERT.

Sirs, War Office, April 17, 1846.

With reference to your letter of the 20th January last, enclosing your bill of expenses in the defence of Lieutenant Hyder of the 10th Hussars, I am directed to acquaint you that the Secretary at War, after due consideration and inquiry on this subject, finds there is no precedent for payment on the part of the public of the fees of counsel or solicitors employed by an officer tried by court-martial, whether acquitted or not, and he cannot therefore sanction any allowance under these heads on the present occasion.

The charge for a shorthand writer, amounting to 57*l.* 13*s.* 4*d.*, is however allowed, and the regimental agents, Messrs. Cox & Co., have been instructed to pay that sum to you.

The claims of the witnesses have been already examined and allowed by this department according to the established regulations on that head.

I have, &c.

(Signed) L. Sullivan.

Messrs. Rippingham & Rose,
Great Prescot Street.

Sir R. C.'s Case.

In November 1856 Sir R. C. was placed under arrest by the general officer commanding at the Cape of Good Hope, and tried by a general court-martial upon a charge of having "falsely asserted that he had knocked "down or struck Captain L., of the regiment, well "knowing that such was not the case, and thereby "reflecting injuriously upon the character of that "officer, such conduct being to the prejudice of good "order and military discipline."

The court-martial found him *guilty* of the charge and adjudged him to be *cashiered*, but the Judge Advocate-General declared the proceedings irregular and defective in several material particulars, one being that the prisoner had not an opportunity given him of producing important witnesses in his behalf, and another that the court adjourned to admit of the presence of witnesses on the part of the prosecution, and he recommended that the proceedings should not be confirmed, and Her Majesty refused to confirm them accordingly.

In the examination of the accounts of the assistant military storekeeper, for December quarter, 1857, is found a voucher amounting to 44*l.* 2*s.* 4*d.* for travelling expenses of Sir R. C. in proceeding from King William's Town to head-quarters to undergo his trial and returning, and for detention allowance at Graham's Town, which has been paid upon the authority of the officer commanding; knowing of no precedent for such a charge I submit the question for consideration.

It appears that the rule of the service is that, "when "an officer is found guilty of the charges preferred "against him he must himself pay the witnesses summoned in his defence. When acquitted, if the charges "are preferred at the instance of the Crown, those "expenses are paid by the public; and if the charges "are preferred at the instance of an individual officer "and arose out of any personal disputes, those expenses "are not borne by the public." In the case of Sir A. H., who proceeded from London to Demerara to defend himself against certain charges brought against him in the execution of his duty as Deputy Inspector-General of Hospitals in the West Indies, it was admitted to be a Crown prosecution, and Sir Andrew was acquitted upon all the disreputable matter contained in the charges, nevertheless it was ruled that as it was only a qualified acquittal, and the allowance of the expenses of his witnesses, as well of his personal expenses, were refused.

A similar case was followed in the case of Lieutenant S., R.A.

In these circumstances the *travelling expenses* of Sir R. C. would seem to be inadmissible, but there is this, a remarkable feature in the case: The court was summoned to assemble at Graham's Town on the 29th November, on which day Sir R. C. arrived. On the 4th December it was adjourned for the production of witnesses against the prisoner, and continued adjourned for that purpose until 13th February—a period of 71 days.

This adjournment is condemned by the Judge Advocate-General as highly irregular, and as it was not at the instance of Sir R. C., and as during this time he was unnecessarily detained at Graham's Town and subjected to great expenses, it becomes a question whether he should not for such period receive his personal allowance and lodging money. Such allowance, however, to cease on the resumption of the court.

Mr. Clode,

Will you be good enough to raise the question of expenses of officers tried by court-martial in considering the next Mutiny Act?

J. R. Godley.

Mr. Godley,

I will endeavour briefly to show the law and changes in the law of costs in civil and criminal matters, and offer one or two suggestions for your consideration.

1*st. As to Civil Proceedings.*

The rule of the common law was that neither plaintiff or defendant ever recovered any costs of suit.

This was remedied by several statutes; the first as to plaintiffs being 6 Edw. I. c. 1., and the first statute as to defendants being the 52 Hen. 3. c. 6., which entitled the parties to costs.

By a series of statutes ending with 15 & 16 Vict. c. 76., the rule of law is that the costs follow the verdict, with one exception, that in frivolous suits, wherein the plaintiff shall recover no costs unless the judge trying the cause certifies in his favour (Sir F. Pollock's Act, 3 & 4 Vict. c. 24.).

2*nd. As to Criminal Proceedings.*

The rule was the same, but on a different principle, or rather it would be more correct to say with a different reason assigned, viz., that the Crown, the nominal plaintiff, never paid or received costs of suit.

The same rule applied as to witnesses, who, though bound to obey the subpœna, had no claim for loss of time or for expenses.

This as to prosecutors and witnesses was remedied by Sir Robert Peel's Act (7 Geo. 4. c. 64. ss. 22 & 23.) in cases of felonies and misdemeanours, and the subject has been dealt with by 14 & 15 Vict. c. 55.

As to defendants' costs, the rule is—the exceptions being as I shall afterwards state—that they have no allowance made to them, and the editor of Dr. Burn's Justice remarks on it as a defect in the law.

The exceptions are as follows:—

1. In summary applications before justices costs are allowed to defendants under 11 & 12 Vict. c. 43.
2. In cases of libel the defendant acquitted is entitled to recover his costs against the prosecutor, 6 & 7 Vict. c. 96. s. 8.
3. In cases removed from the Queen's Bench to the Central Criminal Court under 19 Vict. c. 16. the court may order an advance not exceeding 20*l.* to be made to the accused for payment of his witnesses.

It is clear, therefore, that a prosecutor may wrongfully entail considerable expense on a defendant, assuming the latter to be acquitted, but a protection is given to the civilian which anyone subject to and prosecuted under the Mutiny Act is deprived of, viz., the civilian has his action against the prosecutor for damages in malicious prosecution, but it was held in Johnstone *v.* Sutton, 1 Ter. Rep. 548, that no action would lie for a malicious prosecution before a court-martial.

Assuming then that in the opinion of the court-martial such a prosecution was "based on no probable "cause," justice would seem to require that the accused should receive reparation from the prosecutor rather than punishment in the shape of expense.

If this principle be admitted it would be necessary to empower the court to adjudicate (within certain defined limits) on the subject of costs, and (as the only method of recovering such from a prosecutor) it should be a condition that he deposit a certain sum in the hands of the Judge Advocate when he presents a personal charge (such being carefully defined by regulation) against another officer, to answer any claim for costs which the court may think the accused fairly entitled to on acquittal.

Charges unsupported by legal evidence or may be against the truth are in fact libels and in analogy to the rule of law; the prosecutor should be made to pay the acquitted party the expenses occasioned.

The rule of payment out of the public purse could be easily adjusted if the court-martial had a jurisdiction given them to adjudicate on costs generally. I may add that since the passing of 14 & 15 Vict. c. 99. (which enables plaintiff or defendant to be a witness) the

courts of law have awarded the plaintiff or defendant his expenses of attending the trial, and in case of a naval officer his subsistence while remaining in England awaiting the trial. Howes *v.* Barber, 16 Jur. 614.
12/8/58. C. M. C.

SIR, War Office, October 28, 1858.

I AM desired by Secretary Major-General Peel to invite the attention of His Royal Highness the Commander-in-Chief to the subject raised in the accompanying papers (marked in the margin), viz., the expenses which officers acquitted by courts-martial are put unto by reason of their trial, with a view of ascertaining whether, in the opinion of His Royal Highness, any change such as is suggested in the Solicitor's Minute (a copy of which is enclosed) can be made in the Mutiny Act and Articles of War with advantage to the service.

I have, &c.
(Signed) B. HAWES.

The Military Secretary,
&c. &c.

Judge Advocate-General's Office,
SIR, November 8, 1858.

IN reply to your letter of the 4th instant, giving cover to the papers herewith returned, and with reference to a memorandum contained in your other letter of the same date, requesting my opinion relative to the proposal to authorize the payment of the expenses to which officers acquitted by court-martial are subjected by reason of their trial, I have the honour to submit the following observations for the consideration of His Royal Highness the General Commanding-in-Chief.

From the papers submitted to me I gather that it is proposed to insert a provision in the Mutiny Act "empowering a court-martial to adjudicate (within certain "defined limits) on the subject of costs" (see Mr. Clode's letter, addressed to Mr. Godley, dated 12th August, 1858), and that this power of adjudication on the subject of costs is to be confined to the case of officers. The observations here offered will therefore have reference to the proposition as above stated.

I do not think it necessary here to consider the nature and degree of the hardship to which the officers in question are subjected. Whatever that may be they have to endure it at present in common with non-commissioned officers and private soldiers who are similarly circumstanced, and with all those civilians for whom the legislature has not yet thought fit to provide a compensation in case of acquittal before the courts of ordinary criminal jurisdiction.

Assuming, however, that it be desirable to alter this state of the law generally, the expediency of doing it in the case of officers to the exclusion of non-commissioned officers and private soldiers seems, to say the least of it, open to grave objection. The existing military law, so far as the relative positions of the officer and soldier admit, appears to me to be impartial in its principles. The proposed alteration in favour of officers will at once deprive it of that character, and while seeking to remove an occasional hardship will introduce an element of general injustice as between man and man.

The proposed alteration is therefore in my opinion indefensible in principle.

I am also disposed to think that it would be found extremely difficult in practice.

1st. With regard to the cases in which the officer on acquittal is to be entitled to costs.

It is suggested (see Mr. Clode's letter) that costs are to be grantable by the court when a prosecutor presents a personal charge (such being carefully defined by regulation) against another officer. I think it very doubtful whether it would be possible to frame a satisfactory definition of a personal charge.

2ndly. It is suggested that every prosecutor is to deposit a certain sum in the hands of the Judge Advocate-General when he presents a personal charge against an officer. This would seem to preclude a private soldier from ever bringing a personal charge against an officer, and would thus make the original injustice of the principle still more glaring in practice.

3rdly. A court-martial is a tribunal which differs from a court of ordinary criminal jurisdiction in many particulars which have an important bearing on the present question.

The ordinary courts have subordinate officers, a part of whose business it is, after the trial is over and the judicial members of the court have discharged their particular duties, to go minutely into the details of the costs of those parties to whom the court has thought fit to award costs. This process is often long and intricate, and occasions references to the court long after the trial is over.

A court-martial has no such subordinate officer. Therefore the 13 officers must either simply award costs generally, leaving the amount to be ascertained and determined by some other authority, or they must continue their sittings till they have judicially investigated and ascertained all the items of expenses for which the acquitted party seeks to be reimbursed.

In many cases this might not only be detrimental to the service, but a great hardship on the officers composing the court.

It is also not undeserving of consideration whether a tribunal composed of 13 officers is well fitted for the conduct of such investigations.

If, on the other hand, the court is merely to award costs generally, it may be difficult to provide at every military station and in the field a competent authority to assess the costs in detail.

4thly. A further difficulty suggests itself, in considering who is to determine the amount of the sum that a prosecutor is to deposit in the hands of the Judge Advocate-General when he presents a personal charge, and on what principle is such amount to be determined? For it is evident that the costs that may be incurred by the defendant during the trial cannot be then known even to the defendant himself. This part of the proposed enactment seems to require the more consideration in that it is an anomaly in English law.

With regard to the concluding paragraph in Mr. Clode's letter, viz., "the rule of payment out of the "public purse could be easily adjusted if the court-"martial had a jurisdiction given them to adjudicate "on costs generally," I feel some difficulty in addressing myself to its consideration, since it seems to contemplate a payment of costs by the Treasury and not by the prosecutor, and therefore to have in view some mode of procedure other than the suggested deposit of a certain sum by the prosecutor in the hands of the Judge Advocate-General in personal cases.

I have, &c.
(Signed) JOHN ROBERT MOWBRAY.

Lieut.-Col. Reynolds,
&c. &c. &c.

SIR, Horse Guards, November 17, 1858.

I HAVE the honour, by direction of the General Commanding-in-Chief, to transmit to you, for submission to the Secretary of State for War, the accompanying copy of a letter from the Judge Advocate-General, having reference to a communication addressed to Mr. Godley by Mr. Clode, solicitor to the War Department, on the 12th of August last relative to a proposal to authorize the payment of the expenses to which officers acquitted by court-martial are subjected by reason of their trial; and the insertion of a provision in the Mutiny Act empowering a court-martial to adjudicate (within certain defined limits) on the subject of costs; and I am directed to request you will state to Major-General Peel, that after duly considering the matter His Royal Highness entirely concurs in the opinion expressed by Mr. Mowbray as to the inexpediency of altering the Mutiny Act in accordance with the proposal in question.

I have, &c.
(Signed) C. YORKE.

The Under Secretary of State,
War Office.

CAPTAIN ROBERTSON'S CASE.

Army and Navy Club,
SIR, St. James's Square, July 15, 1862.

THE proceedings of the late court-martial having resulted in my acquittal, I have the honour to enclose you a statement of my expenses which I have been put to in proving my innocence of the charges preferred against me.

I have, &c.
(Signed) ARTHUR M. ROBERTSON.

The Under Secretary of State
for War.

Judge Advocate-General's Office,
August 1, 1862.

SIR,

IN reply to your letter of the 28th ultimo, transmitting the documents herewith returned, I have the honour to inform you that the rule of military law with reference to the expenses incurred by parties who are arraigned before a court-martial is the same as that which prevails in the courts of ordinary criminal jurisdiction with reference to the expenses incurred by prisoners who are arraigned before those courts. In the absence of any legislative provision to the contrary such expenses have to be borne by the parties accused. I am not aware that there is any distinction made in this matter between the cases of parties who are acquitted and those who are convicted.

With regard to that part of Captain Robertson's letter in which he speaks of the expenses which he has been put to in "proving his innocence of the charges preferred against him," it is to be observed that a distinction may sometimes exist between cases in which a court-martial come to a finding of not guilty and those in which a court-martial come to a finding of guilty, but for some legal reason the proceedings are not confirmed.

I have, &c.
(Signed) THOS. E. HEADLAM.

Major-Gen. Sir E. Lugard, K.C.B.,
&c. &c. &c.

War Office, August 28, 1862.

SIR,

IN reply to your letter of the 15th ulto., I am desired by Secretary Sir G. C. Lewis to inform you that the rule of military law with reference to the expenses incurred by parties who are arraigned before a court-martial is the same as that which prevails in the courts of ordinary criminal jurisdiction with reference to the expenses incurred by prisoners who are arraigned before those courts. In the absence of any legislative provision to the contrary such expenses have to be borne by the parties accused. Therefore the expenses incurred by you in respect of your recent trial before a court-martial cannot be defrayed by this department. The statement received with your letter is returned herewith.

(Signed) EDWARD LUGARD.

Capt. Robertson.

No. 12.

UPON the PERSONS liable to be tried by COURT-MARTIAL.

1. IT may be useful to trace the progress of legislation, and to notice in so doing how completely the tone of public opinion, as expressed by members of the legislature, has been altered on this subject since the first Mutiny Act was passed.

Civil administration and military government of the army.

2. When the standing army was sanctioned by Parliament its "administration" was entrusted to responsible parliamentary ministers acting through the agency of civilians; but the "government" of the army, under the Mutiny Act and Articles of War, was exercised by the Sovereign, either in person or through military officers, whose authority was supposed to be absolute. Whenever, therefore, the ministers of the Crown made any proposal to Parliament to extend the provisions of the Mutiny Act to any class of their fellow subjects not hitherto liable to military law, they had to encounter very considerable opposition from those statesmen who looked with distrust upon any attempt to increase the powers of the Crown in the administration or government of the army.

3. Nor can it be said, while the government and command of the army rested solely with the Sovereign, and was placed by him beyond the control of the civil ministers, that this constitutional jealousy against the power of the Crown, as developed by the extension of the Mutiny Act, was altogether groundless. The "penalty" for the crime of disobedience was (and, I may add, still is) death, or such other punishment as a court-martial should award; and the "crime" was (and, I may again add, still is) too indefinite to remove entirely the force of these objections.

4. When the Act of 1717 rendered it obligatory upon every officer and soldier "to obey the military "orders of his superior officer," the Lords protested on the journals of their House in these words:—

3 Geo. I. c. 2. s. 1. 7 Parl. Hist., p. 430.

"Because this Bill doth establish martial law, extending to the life of the offenders in time of "peace, which, we conceive, is contrary to the "ancient laws of this kingdom; and the soldiers "are obliged to obey the military orders of their "superior officers, under the penalty of being sentenced by a court-martial to suffer death for their "disobedience, and that without any limitation or "restriction, whether such orders are agreeable to "the laws of the realm or not; when, by the fundamental laws thereof, the commands and orders of "the Crown (the supreme authority) are bound and "restrained within the compass of the law, and no "person is obliged to obey any such order or command if it be illegal, and is punishable by law if "he does, notwithstanding any such order or command, though from the King."

5. The amendment in the Bill of the following years, that obedience should be given "to any *lawful* command of a superior officer" failed to allay the apprehensions of many statesmen, and in the year 1749, when the words were altered (as they now stand in the Bill), so as to render positive disobedience the criterion of crime, the opposition was not silenced. "An officer" (said Lord Westmoreland) "must obey the orders of the Commander-in-"Chief, or be shot for disobedience by the sentence "of a court-martial; for a court-martial properly "chosen will deem every order lawful that can be "issued by their chief commander,* and from them "there is no appeal, for which reason, I think, the "contest about inserting or not inserting the word "'lawful' in this part of the Bill was a contest of "very little moment. It does, indeed, give the "court-martial a pretence for not condemning a "disobedient officer, but it is a pretence which no "court-martial will ever, I fear, make use of, when "it is insinuated to them that the Prince or Gene-"ral expects they should condemn; for officers "are not generally much conversant in any laws "but those of war, and, according to the laws of "war, every command is lawful that seems to be "for the good of the service."

Tendency in courts-martial to hold all orders lawful. 14 Parl. Hist., p. 396.

6. Originally, and indeed until a very recent period, none but combatant officers on active service were made liable to the Mutiny Act, and all the civil servants to whom the care and administration of public money or public treasure were entrusted, who were liable to account to the Civil Departments of the State for the discharge of their civil duties, were, for obvious reasons, excluded from the provisions of the Act. However, the military has swallowed up the civil element, and now, as it will be seen, civil servants have become military administrative officers, and as such liable to punishment for disobeying the orders of the superior combatant officers.

What are the limits of obedience?

7. What are the limits of obedience is a question not removed from the region of doubt, though the duty of an officer according to the high authority of Lord Mansfield, is that of implicit obedience. "A "subordinate officer must not judge of the danger, "*propriety, expediency, or consequence* of the orders "he receives; he must obey; nothing can excuse "him but a physical impossibility." To apply such a rule as is here indicated to administrative officers, to those who morally if not legally have a responsibility to the Crown and to Parliament to prevent the wasteful expenditure of money or stores, is to

Sutton v. Johnston, 1 Ter. Rep., p. 546.

* In 1749 a motion was lost in the House of Commons (by 233 against 130) for the constitution of courts-martial by rotation and not by the selection of officers for court-martial duty by the General in command.

expose them to the hazard of being *contumacious* officers on the one hand, or *useless* ones on the other.

24 H. D. (3rd), p. 815.

8. In Captain Atchison's case, the rule of obedience became the subject of much controversy in Parliament. That officer had remonstrated against the order to fire a salute in honour of a Saint of the Roman church, and for this act of disobedience he was dismissed the service by the Duke of Wellington (then the Master-General of the Ordnance). In the parliamentary discussion both officers and civilians took a widely different view of the obligation resting on Captain Atchison to obey *such an order*. "Every "military man was bound," according to the theory of one member of the House and of the army, "to "obey the orders given to him, let those orders be "what they might. It was perfectly true a man might "receive an order which his superior officer was not "justified in giving, but it was the man's duty to obey "that order in the first instance, and afterwards to "obtain redress. Much stress had been laid on this "being a religious ceremony, but he thought, from "the facts which had been stated, that it was a "military duty he had been ordered to perform. "Any military man who was ordered to fire a salute, "or to perform *any* duty in his military capacity, "*whatever the nature of that duty might be*, was "bound to perform it; and if he refused he would "be liable, and ought, of course, to be brought be-"fore a proper tribunal to judge whether he had "acted correctly or incorrectly in so refusing."

19 H. D. (3rd), p. 785, 6.

9. Obviously this was the view upon which the Duke of Wellington and Commander-in-Chief had acted; but it was not generally concurred in by members of the House, including officers of the army. Sir De Lacy Evans protested against the rule of obedience that had been so laid down; he thought the case one of arbitrary and unjustifiable exercise of authority. "He doubted very much the "legality of the proceeding, as he did not find that "the petitioner had disobeyed any orders that had "been given, but had merely stated his religious "scruples, which his superior officer bowed to." Sir Robert Inglis, Mr. O'Connell, and Mr. Shiel also spoke against the decision.

p. 789.
p. 790.
30 ib., p. 130.
88 ib., p. 318.

Progress of legislation. Wm. III.'s reign.

10. In the Mutiny Act of William III.'s reign, "Every person being in their Majesties service in "the Army, and being mustered, *and in* pay as an "officer or soldier," was liable to military trial and punishment.

Queen Anne's reign, 1702. Artillery made liable.

11. In the Mutiny Acts of Queen Anne this class was enlarged in two instances; 1st, a doubt having been raised whether the officers and persons employed in the trains of artillery were within the Act, a clause was inserted, Stat. 2, c. 20, sec. 46, "that the officers and soldiers employed, or that "shall be employed, in the several trains of artillery, "shall be at all times subject to the Act;" and secondly, another doubt whether any gentleman of fortune* serving in the army without receiving pay was subject to the Act (as both a commission *and* a receipt of pay were needed to render an officer liable) the Act (the 6th Anne, c. 18) was amended by placing the disjunctive "or" for the conjunctive "and," plainly to make *all* persons serving with the army subject to the laws of the army.

12. Lord Egmont traced the growth of what he termed "the noxious weed which had almost already "overshadowed our Constitution," to the year 1754 in these sentences,—"that though our first Mutiny "Acts extended only to the land officers and soldiers "within this kingdom, yet that of the 4th and 5th "of William and Mary was made to extend to "Jersey and Guernsey; that of the 8th and 9th "of William was made to extend to all officers "and soldiers in the marine service; that of the "13th of William was made to extend to Ireland "as well as England, and indeed to all the forces "His Majesty should have on foot anywhere in "the world; that of the 1st of Queen Anne was "made to include likewise all those belonging to the "trains of artillery; and that of the 10th all the "invalid companies; the second Mutiny Act of the "1st of His late Majesty's reign was made to extend "to Gibraltar and Minorca; and ever since the "beginning of His present Majesty's reign, our "Mutiny Acts have been made to extend to all His "Majesty's dominions beyond the seas, besides all "the places I have before particularly mentioned."

Half-Pay Officers. Formerly liable to the Mutiny Act, 1715. 14 P. Hist., p. 475. 1 MacArth., p. 192. 21 Tind. Engl., p. 337.

13. The liability of half-pay officers to the Mutiny Act has given rise to much discussion. When the question came first under consideration, it was held that officers on half-pay were liable to the Act, and to the punishment of deserters if they failed—as in 1715 some did fail—to obey the commands of the Crown to return to active service.

14. The case of the half-pay officers taken at Preston was submitted to the decision of the Cabinet, and the King was advised to try them under the Mutiny Act as deserters. Warrants were accordingly issued by Sir W. Pulteney, as Secretary at War, for convening a court-martial, before which four out of the five officers taken prisoners were arraigned and sentenced to be shot to death as deserters, a sentence which in due course was executed against them. The officer who escaped punishment was shown to have resigned his commission before joining the Pretender, and therefore he was not brought to trial before the court-martial.

15. The legality of these proceedings became a subject of controversy in 1749, when Sir W. Pulteney (speaking in the House of Lords as Earl of Bath) excused himself for having issued such a warrant, and expressed his opinion that, though no doubt the prisoners were guilty of treason and liable to the punishment of death, yet that they were not properly tried under the Mutiny Act for the crime of desertion.

21 Geo. II. c. 6. Mutiny Act of 1747 made liable.

16. In 1747 the subject was dealt with in the Mutiny Act. The last clause in the Act recited, "that it might be otherwise doubtful whether the "reduced officers on half-pay were within the in-"tent and meaning of the Act," and then it made reduced officers liable at all times "to all the "penalties and punishments mentioned in the Act," and declared "that they should in all respects what-"soever be holden to be within the intent and "meaning of every part of the Act during the "continuance of the same."

1749. Clause omitted. 1 MacArth., p. 192.

17. In 1749 a debate arose upon the clause, and opinions were so strongly expressed that it was withdrawn, and in the next year an effort to have the clause reinserted in the Act failed of success.

1785. General Ross' case. Twelve Judges' decision that half-pay officers are not liable. Ibid., p. 196.

18. In 1785 the question was revived by the arraignment before a court-martial of General Ross (an officer on half-pay), whose offence appears to have been writing and sending a letter reflecting upon one General Boyd. The court on its assembling adjourned, that the opinion of the 12 judges might be taken on the question of the prisoner's liability to trial by a court-martial. Their opinion was that neither his warrant as a general officer nor his annuity of half-pay rendered him obnoxious to military trial. The general was thereupon discharged from the custody of the marshal and the court dissolved.

1786. Cabinet refuse to amend the Mutiny Act.

19. In consequence of this decision the Secretary at War proposed to alter the Mutiny Act in 1786; but the Cabinet, so far as his proposed amendments related to half-pay officers, declined to sanction them,—

W. O. Coll., Treas. Letters, 1785 to 1785.

"Downing Street, Sunday, March 12, 1786.
"Dear Sir, "(Half-past 4 p.m.).
"Having consulted the Cabinet relative to the alterations suggested in the Mutiny Bill, I find it to be their opinion that there can be no objection to the words proposed by Sir Chas. Gould for the purpose of including brevet officers under the general description of commissioned officers, but they think it more prudent to omit other clauses respecting officers on half-pay, at least for the present.

"I am, dear Sir,
"Most sincerely yours,
"Sir Geo. Yonge. "W. Pitt."

27 Annual Reg., p. 230. 25 Geo. III. c. 6. sec. 1. 26 Geo. III. c. 10. sec. 1.

20. The amendment made was comparatively unimportant. Thus, in the Act of 1785 the persons liable were, "any mustered, or in pay as an officer," and in the Act of 1786 they were, "any who is or "shall be commissioned or in pay as an officer." It however was strongly opposed in the years 1786 and 1787, but the words stand in the Mutiny Act at the present time (1868).

28 Annual Reg., p. 108.

21. The same question was brought incidentally

* However the War Office Records explain the necessity for this alteration to have arisen from the wording of the Recruiting Act of 2 & 3 Anne, c. 5, sec. 1, under which a soldier guilty of mutiny could not be proved to have been "enlisted according to the Statute," and therefore Sir E. Northey (Attorney-General) advised, 29th December 1705, that the men could not safely be tried under the terms of the Mutiny Act, as it then stood.

29 Ibid., p. 110. 1825. 4 B. & Cr., 308. Liable to Mutiny Act if employed.

before the Court of King's Bench in the year 1825. There, in Bradley *v.* Arthur, the defendant held the appointment of Governor and Chief Command at Honduras, and objection was taken to his authority because he was not himself (as a half-pay officer) amenable to the Mutiny Act. Dealing with objection, Mr. Just. Bayley said:—

"You are at liberty to appoint a military character, whether upon half-pay or whether upon full; and in substance I can see no reason for the distinction between the one and the other. You cannot appoint a civil individual, because he will not have the competent skill and judgment; but a half-pay officer will be likely to have as much judgment as a full-pay officer, therefore I can see no reason why the power should not be conferred upon him as well as any other individual. The objection to that is, that by the words of the Mutiny Act there is no power to call to a court-martial any person except such as shall be commissioned or in pay as officers. The decision of the judges that a half-pay officer is not liable to a court-martial applies, I apprehend, to *unemployed* half-pay officers only; they do not come within the words of the Mutiny Act, which describe such officers as are amenable to a court-martial, viz., persons commissioned or in pay as officers. But *employed* half-pay officers seem to me to come within the description, because, if they have no commission, they are nevertheless in pay as officers. Whether the defendant had any specific pay in this case because he commanded the forces, did not distinctly appear; but it can hardly be supposed that so important a situation was without pay, and I think the words in the Mutiny Act "in pay" are equivalent to the word "employed." Instead of the position that the defendant could not be employed because he was not amenable to a court-martial, I think the converse is the truth, that he was amenable to a court-martial because he was employed. There is a plain distinction between the case to which I have referred and this case. An unemployed officer has no pay in the character of an officer, and I should apprehend that in all cases where a party is employed he has pay as an officer; but I do not find anything in the Mutiny Act which says that the person to whom a command is delegated must of necessity be liable to a court-martial."

Feb. 8, 1836. 31 H. P. D. (3rd), p. 147.

22. It may be assumed it would now be held that half-pay officers, merely as such, are not amenable to the Mutiny Act.

Extended to troops in India and in America.

23. In the year 1754 the Act, after the proposal had met with great opposition, was extended to the troops of the East India Company serving in India, and then to His Majesty's troops and local troops serving with them in North America.

Sappers and Miners.

24. In the year 1788 a large number of civil artificers serving in the Ordnance Department were enlisted as soldiers, and thus the military corps of sappers and miners was formed. It was proposed to render them liable to the Mutiny Act by adding these words to clause 75 of the Act:—"And all officers "serving, or that shall serve, in the corps of Royal "Engineers, and all officers and persons serving, or "that shall serve, in the corps of Royal Marines, "artificers, and labourers, and all master gunners "and gunners who now are or shall be under the Ord-"nance;" but it met with a strong opposition from Mr. Sheridan and Mr. Fox, who urged that Parliament ought to repel the innovation *in limine*—as a system that might go to the shipwright and to every other department of the Government—and that a paltry saving of 2,000*l.* a year, the difference between pay and wages, was an insufficient reason for putting 600 Englishmen under military law.

27 Parl. Hist., p. 163 to 167. 28 Geo. III. c. 12.

Commissariat and store officers. 1809.

25. No addition appears to have been made to the persons liable to the Act until the year 1809, when the civil servants of the Treasury and Board of Ordnance, viz., the commissariat and storekeepers, public servants responsible for the charge and issue of public monies and public stores, were brought under the Act for the limited purpose of trial by court-martial for offences committed by them against the ordinary criminal law of the country. Thus the Act of that year enacted, "That every commissioned officer, "storekeeper, or commissary, or deputy or assistant "commissary, or other person employed in the Com-"missariat Department, or in any manner in the "care or distribution of any money, provisions, "forage, or stores belonging to His Majesty's forces, "or for their use, *that shall embezzle or fraudulently* "*misapply*, or cause to be *embezzled or fraudulently* "*misapplied*, or shall knowingly or willingly permit "or suffer any money, provisions, forage, arms, "clothing, ammunition, or other military stores to "be embezzled or fraudulently misapplied, or to be "spoiled or damaged, may be tried *for the same* by "and before a court-martial."

Compare 48 Geo. III. c. 15. sec. 34. with 49 Geo. III. c. 12. sec. 101.

26. But in the year 1818 a concession was made which weakened the principle of control by civil servants of the Crown over military expenditure, and here, as in the earlier Acts, the power was conceded to "settle doubts that had been raised," thus it was enacted—"And whereas doubts have arisen whether "officers and persons commissioned or employed in "the Commissariat Department, or in the office of "storekeeper to His Majesty's regular forces, be "within the intent and meaning of this Act; be it "declared and enacted, that all officers and persons "who are or shall be commissioned or employed "in the Commissariat Department or as store-"keeper, or under the Storekeeper-General, who "are or shall be serving with any part of His "Majesty's forces at home or abroad, and are or "shall be placed under the command of any general "or other officer having commission from His Ma-"jesty, shall be, to all intents and purposes, liable "to the provisions of this Act, and to the same Rules "and Articles of War, and the same penalties and "punishments, as in the case of His Majesty's other "forces."

58 Geo. III. c. 11. sec. 136.

1819. 59 Geo. III. c. 9. sec. 138.

27. The previous clause related to civilians acting under the Treasury and War Office, but in the following year the principle was extended to the civil servants of the Board of Ordnance:—"And whereas it "is expedient that the provisions of this Act should "be extended to the storekeepers and other civil "officers acting under the Ordnance at foreign sta-"tions; be it therefore enacted, that all storekeepers "and other civil officers who are or shall be employed "by, or act under the Ordnance, at any of His Majes-"ty's Ordnance Establishments at foreign stations, "shall be to all intents and purposes liable to the "provisions of this Act, and to the same Rules and "Articles of War, and to the same penalties and "punishments, as in the case of the other officers and "persons acting under the Ordnance herein-before "made liable to this Act."

14 State Trials, p. 64.

28. Although liable to the Mutiny Act for offences committed against its provisions, still the Treasury, the War Office, and the Ordnance held an exclusive control over these civil servants, and through their agency were able to control expenditure. The expediency of this arrangement was emphatically stated by the late Duke of Wellington and Lord Hardinge in their evidence before the Royal Commission on the civil administration of the army in 1837, and on other occasions; but in the year 1858, the commissariat, and in the year 1861, the storekeepers, changed their status from civil servants to military officers, whereby the public Treasure passed from the exclusive control of the civil departments of the State, and became subject to the order of superior officers exercising the powers of command under the Mutiny Act. Certainly these arrangements present a strange contrast to the constitutional doctrine relating to the custody of the public Treasure and the special functions of the Lord Treasurer as the guardian of it, laid down by the great Lord Somers in the Bankers case:—"The public Treasure is of the highest esti-"mation in the consideration of the law. Sir "Edward Coke says it is the ligament of peace, the "sinews of war, and the preserver of the honour "and safety of the realm; consequently the power of "issuing this treasure is of the highest importance. "The Lord Treasurer (whose known business it is) "is expressly sworn truly to keep and dispend the "King's treasure; but if this notion prevails (viz., "that the Barons of the Exchequer could order the "issue of public money, as the petitioners there "contended) he must from time to time dispend that "treasure according to the opinion and directions of "other officers who are unsworn in that point."

31 Vict. c. 14. sec. 2.

29. The results of legislation on this subject from William III.'s reign to the present year of the Queen are seen by reference to the second clause of the Mutiny Act, 1868, in which all the persons originally liable to military law are shown by words in italics, and those persons that have been subsequently added are shown in words printed in Roman letters, thus:—"All the provisions of this Act shall apply to *all* "*persons who are or shall be commissioned or in pay* "*as an officer, or who are or shall be listed or in pay*

" *as a non-commissioned officer or soldier*, and to all " Warrant Officers, and to all persons employed on " the recruiting service receiving pay, and all pen- " sioners receiving allowances in respect of such " service, and to persons who are or shall be hired " to be employed in the Royal Artillery, Royal " Engineers, and to Master Gunners, and to conduc- " tors of stores, and to the corps of Royal Military " Surveyors and Draughtsmen, and to all officers " and persons who are or shall be serving on the " Commissariat Staff, or soldiers in the Commissa- " riat Staff Corps, and to officers and soldiers serv- " ing in the Military Store] Department or in the " Military Store Staff Corps, and to persons in the " War Department who are or shall be serving " with any part of Her Majesty's army at home or " abroad, under the command of any commissioned " officer and (subject to and in accordance with the " provisions of an Act passed in the sixth and " seventh years of the reign of Her present Majesty, " chapter ninety-five), to any out-pensioners of the " Royal Hospital, Chelsea, who may be called out " on duty in aid of the civil power or for muster or " inspection, or who having volunteered their services " for that purpose, shall be kept on duty in any fort, " town, or garrison, and to all military store officers " and other civil officers who are or shall be employed " by or act under the Secretary of State for War at " any of Her Majesty's establishments in the islands " of Jersey, Guernsey, Alderney, Sark, and Man, " and the islands thereto belonging or at foreign " stations;—and all the provisions of this Act shall " apply to all persons belonging to Her Majesty's " Indian forces who are or shall be commissioned or " in pay as officers, or who shall be listed or in pay " as non-commissioned officers or soldiers, or who " are or shall be serving or hired to be employed in " the artillery or any of the trains of artillery, or " as Master Gunners or Gunners, or as conductors " of stores, or who are or shall be serving in the " Department of Engineers, or in the corps of " Sappers and Miners or Pioneers, or as military " surveyors or draughtsmen, or in the Ordnance or " Public Works or Commissariat Departments, and " to all Storekeepers and other civil officers em- " ployed under the Ordnance, and to all Veterinary " Surgeons, Medical Storekeepers, Apothecaries, " Hospital Stewards, and others serving in the Medi- " cal Department of the said forces, and to all licensed " sutlers and all followers in or of any of the said " forces."

Enumeration in Act.

30. In addition to these persons the auxiliary military forces of the Crown, as the Militia, Volunteers, &c., are expressly made liable to the Mutiny Act by the particular Acts of Parliament under which these forces are severally raised.

As to the Militia.

I. *As to the Militia.*

Militia, how far liable. 1 W. & M. c. 520.

In the 1st Mutiny Act the 7th Section enacted, " That this Act or anything therein contained shall " not extend or be anyways construed to extend to " or concerne any the Militia forces of this king- " dom;" and these words—extended to the Yeomanry and Volunteer forces—stand in the present Mutiny Act with this addition: "Excepting only " where by any Act for regulating any of the said " forces the provisions contained in the Mutiny Act " are, or shall be, specially made applicable to such " forces."

Militia Acts.

31. Turning to the Militia Acts, the following provisions are found there:—

42 Geo. III. c. 90. sec. 89.

(1.) "During the period of training and exercise " all the clauses, provisions, matters, and things " contained in the Mutiny Act and Articles of War " shall be in force with respect to such Militia in all " cases whatsoever, but so that no punishment shall " extend to life or limb."

2 Geo. III. c. 90. sec. 111. Reg. v. Jessop, 1 Diar. C. C., p. 619.

(2.) During the time that the Militia is "drawn " out and embodied, until the same shall be returned " again to its own county and disembodied by Her " Majesty's order, it shall be subject to all the pro- " visions contained in the Mutiny Act, and Articles " of War, and all the provisions contained therein " shall be in force with respect to the Militia while " embodied, as aforesaid, in all cases whatsoever."

17 & 18 Vict. c. 105. sec. 53.

(3.) During the time that any Militia volunteer is " attached for a time for the purpose of instruction " to any regiment of Her Majesty's forces or Per- " manent Staff of Militia, he shall for such time be " deemed to be under the operation of the Mutiny " Act and under the command of the officer com- " manding such regiment or Permanent Staff of " Militia."

42 Geo. III. c. 90. cc. 103. 17 & 18 Vict. c. 105. sec. 33. See also 22 & 23 Vict. c. 38 sec. 12. 23 & 24 Vict. c. 94. sec. 15.

(4.) The Permanent Staff of the Militia "shall be " at all times subject to the Mutiny Act and Articles " of War," and it shall be lawful for the colonel of the regiment to direct the holding of courts-martial for the trial of offenders for any offence against the said Act and Articles committed during the time such regiment shall not be embodied, and for the trial of any one who shall have deserted while the regiment was embodied, and shall not have been apprehended till after it shall have been disembodied, but so that no punishment should extend to life or limb.

As to Yeomanry.

II. 32. *As to the Yeomanry.*

44 Geo. III. c. 54. sec. 22.

(1.) That force from the time of the summons of the " Lord Lieutenant to assemble and until the enemy " shall be defeated, &c., (the same to be signified by " Her Majesty's proclamation) shall continue, and " be subject to all provisions in the Mutiny Act and " Articles of War in all cases whatever."

Ib. sec. 23.

(2.) So again when they assembled (such assembling not being under the 46th section of the Act) " to do military duty, or for improving themselves " in military exercise, " or for the suppression of " riots," such yeomanry from the time of so assembling and during the period of their remaining on such military duty, or being engaged in such service as aforesaid, be subject to all the provisions of the Mutiny Act and Articles of War.

Ib. sec. 21.

(3.) The permanent staff of the yeomanry " shall " at all times be subject to the Mutiny Act and " Articles of War, and shall be liable to be tried " for any crime committed against such Act and " Articles" by any court-martial, according to the nature and degree of the offence, in like manner and under the like regulations as the permanent staff of the military forces, provided the court-martial is composed of yeomanry officers, and that no punishment awarded extend to life and limb, except when such corps is "called out in case of " invasion."

As to Volunteers.

III. 33. *As to the Volunteers.*

26 & 27 Vict. c. 65. sec. 23.

(1.) All the officers and men (including the Permanent Staff) when in actual military service are liable to all the provisions of the Mutiny Act (and also entitled to the benefits thereof) in all respects as the officers and soldiers of Her Majesty's army, except that the court-martial shall be composed of officers of the Volunteer force only.

(2.) The Permanent Staff of the Volunteer force when *not* on actual service, are subject to all the provisions of the Mutiny Act (and to the benefits thereof) subject to the variations and provisions which the 22nd Article of the Volunteer Act specifies.

As to Reserve.

IV. *As to the Reserve Force.*

30 & 31 Vict. c. 110. sec. 12.

34. Whenever the Reserve force or any part thereof is called out for training and exercise, or when any of such force having volunteered their services for that purpose are kept on duty as aforesaid, or when such force or any part thereof is called out in aid of the Civil Power as aforesaid, or is called out on permanent service under Her Majesty's Proclamation, all the provisions of that Act and the Articles of War in force shall apply to and in respect of the said force or such part thereof as may be or ought to be on duty on any of the occasions aforesaid, and the officers and non-commissioned officers appointed to command them, as fully as such Act and Articles may be applicable to and in respect of Her Majesty's regular forces; and offences committed by such officers and non-commissioned officers and the men of such force as may be or ought to be on duty on any of the occasions aforesaid, may be inquired of and tried by court-martial assembled under the provisions of any such Act according to the usual discipline of Her Majesty's army; and courts-martial for the trial of any such offences may be holden, and the punishment awarded by any such court-martial may be inflicted, either during the time for which such officers, non-commissioned officers, and men are or ought to be so on duty as aforesaid, or at any time within twelve months after the offence has been committed or the offender has been apprehended.

The Militia Reserve.

V. *The Militia Reserve.*

30 & 31 Vict. c. 111. s. 11.

35. "During any time for which any men enlisted "under this Act may have volunteered to be trained "and exercised with any part of Her Majesty's "army, and whenever any men enlisted under this "Act are upon army service, all the provisions of "the Mutiny Act and Articles of War shall apply "to such men and to all persons whomsoever in "respect of them, as fully as such Act and Articles "may be applicable to and in respect of Her "Majesty's Regular Forces; and offences commit-"ted by such men may be inquired of and tried by "court-martial assembled under the provisions of "any such Act according to the usual discipline of "Her Majesty's army; and courts-martial for the "trial of any such offences may be holden, and the "punishment awarded by any such court-martial "may be inflicted, either during the time for which "such men have volunteered to be trained and "exercised, or (as the case may be) are upon army "service, or at any time within twelve months after "the offence has been committed or the offender "has been apprehended."

Numbers in the preamble; first inserted in 1721.

Compare 8 Geo. II. with 7 Geo. II.

See App. H, I. p. 224 of Report (1867) on Recruiting.

May Parl. Pra. p. 519.

Effect of preamble.

36. Having shown the Statute Law on the subject, it may be stated in conclusion that the declaration as to the number of the Standing Army contained in the preamble does not in any degree affect the question whether any officers and men who may be held in pay *in excess* of that number are liable to the provisions of the Act. This statement of numbers was first inserted in the Act of 1721, and the practice has since continued to be that, so soon as the Committee of Supply has determined the number of men to be maintained during the year, and these resolutions are reported and agreed to by the House of Commons, the Mutiny Bill is introduced. It is in effect a declaration by Parliament, assented to by the Crown, that the Prerogative as to the raising of a Standing Army shall be limited for the year to the number so stated in the preamble.

No limit to the operation of the Militia Act.

37. The doubt was first raised in the debate of 1749 upon making half-pay officers liable to the Mutiny Act, and was referred to the twelve Judges to report "whether half-pay officers, not being in-"cluded in the number of effective men mentioned "in the preamble, could be deemed subject to it, or "to any of the pains and penalties mentioned there-"in, were it not for the last clause contained in the "Bill before the House" (viz., the clause making "half-pay officers liable). It is said that the Judges were divided in opinion, but that Lord Chancellor Hardwicke was clearly for the affirmative.

14 Parl. Hi p. 434.

Note p. 46 of vol. 14. Parl. Hist

38. Again, the corps of Military Artificers not being included in the number of men voted, Mr. Sheridan and Mr. Fox, in the debate of 1788, both insisted on the objection that no man in excess of the number limited by the Act came under its provisions. However, the Judge Advocate-General (Sir Chas. Gould) pointed out that if such a principle were once admitted, it would open a door to every species of disorder, and that every man who enlisted or received pay was subject to be tried by military law without any regard to the number of such offenders.

27 Parl. Hist., p. 1

39. The number of officers and men in the Ordnance Corps were never brought before Parliament, and as to the officers and men of the Standing Army, strict accuracy has never been observed in the enumeration; it is difficult, therefore, to believe that this doubt could ever have been seriously entertained. In 1818, the late Mr. Wynn stated to the House of Commons that there was often a difference between the number of men voted in Supply and mentioned in the preamble. Lord Palmerston, on a later occasion, confirmed this statement, and Lord Panmure, when challenged with an excess, gave the same explanation. Indeed, in 1858, there were 15,000 men (the depôts of Her Majesty's regiments serving in England, under 33 Geo. III. c. 52), who were not mentioned in the Mutiny Act, but no doubt was suggested that they were not subject to military law. So in 1860, after the Mutiny Act had passed, the revised estimates provided for 1,907 men in excess of the number stated in the Mutiny Act of that year, but the Secretary of State (Mr. S. Herbert) did not deem it necessary to pass a Supplementary Bill.

Page 8, Rept. on Ord. Expe diture, 184

Numbers not accura

37 H. D. (S.), p. 867.

18 H. D. (2nd), p. 6

140 H. D. (3rd), p. 22

D. p. 150. 7438/165.

CHARLES M. CLODE.

War Office,
June 1868.

No. 13.

No. 10.

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1865, in continuation of Return No. 1, dated 4th July 1868.

Adjutant-General's Office, 7th April 1869.

During 1865.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
1st Life Guards	—	—	—	—	1	168	—	—	—	—	—	—
2nd "	—	—	—	—	7	616	—	—	—	—	—	—
Royal Horse Guards	—	—	4	266	11	648	—	—	—	—	—	—
TOTAL HOUSEHOLD CAVALRY	—	—	4	266	19	1,432	—	—	—	—	—	—
1st Dragoon Guards	—	—	2	28	21	962	—	—	1	42	13	1,303
2nd " "	—	—	—	—	14	431	—	—	—	—	14	1,001
3rd " "	—	—	2	84	13	1,682	—	—	—	—	7	315
4th " "	—	—	2	168	43	4,365	—	—	—	—	—	—
5th " "	—	—	6	295	39	2,337	—	—	—	—	—	—
6th " "	—	—	1	14	52	2,869	—	—	—	—	—	—
7th " "	—	—	1	63	8	470	—	—	—	—	7	1,136
1st Dragoons	—	—	—	—	20	1,918	—	—	—	—	—	—
2nd "	—	—	1	42	34	2,380	—	—	—	—	—	—
3rd Hussars	—	—	13	1,022	48	2,100	—	—	—	—	—	—
4th "	—	—	—	—	34	2,430	—	—	—	—	—	—
5th Lancers	—	—	—	—	17	772	—	—	—	—	6	448
6th Dragoons	—	—	—	—	31	2,671	—	—	—	—	7	392
7th Hussars	—	—	—	—	3	91	—	—	—	—	2	519
8th "	—	—	3	196	35	2,045	—	—	—	—	—	—
9th Lancers	—	—	5	576	30	1,820	—	—	—	—	—	—
10th Hussars	—	—	9	434	40	1,815	—	—	—	—	—	—
11th "	—	—	7	420	23	1,939	—	—	—	—	—	—
12th Lancers	—	—	2	393	39	2,787	—	—	—	—	—	—
13th Hussars	—	—	—	—	35	4,320	—	—	—	—	—	—
14th "	—	—	—	—	33	2,601	—	—	—	—	—	—
15th "	—	—	3	292	27	1,262	—	—	—	—	—	—
16th Lancers	—	—	1	42	31	2,146	—	—	—	—	6	308
17th "	—	—	7	434	48	1,774	—	—	—	—	2	84
18th Hussars	—	—	—	—	11	845	—	—	—	—	15	1,667
19th "	—	—	1	42	24	1,716	—	—	—	—	13	574
20th "	—	—	—	—	14	2,148	—	—	—	—	10	1,269
21st "	—	—	1	7	51	3,567	—	—	—	—	5	448
TOTAL CAVALRY OF THE LINE	—	—	67	4,552	818	56,263	—	—	1	42	107	9,464
ROYAL ARTILLERY	—	—	106	6,654	2,628	198,314	—	—	—	—	—	—
ROYAL ENGINEERS	—	—	3	Not kn.	351	19,642	—	—	—	—	—	—
MILITARY TRAIN	—	—	11	322	243	18,059	—	—	—	—	—	—
Grenadier Guards, 1st Battalion	—	—	1	42	93	6,152	—	—	—	—	—	—
" " 2nd "	—	—	9	934	61	3,341	—	—	—	—	—	—
" " 3rd "	—	—	2	112	86	5,491	—	—	—	—	—	—
Coldstream Guards, 1st Battalion	—	—	7	462	57	3,171	—	—	—	—	—	—
" " 2nd "	—	—	4	1,374	51	3,617	—	—	—	—	—	—
Scots Fusilier Guards, 1st Battalion	—	—	2	42	54	4,081	—	—	—	—	—	—
" " 2nd "	—	—	—	—	45	3,074	—	—	—	—	—	—
TOTAL FOOT GUARDS	—	—	25	2,966	447	28,927	—	—	—	—	—	—
1st Foot 1st Battalion	—	—	1	112	54	2,068	—	—	—	—	10	1,022
1st Foot 2nd "	1	14	1	84	62	3,060	—	—	—	—	—	—
2nd " 1st "	—	—	3	164	34	2,041	—	—	—	—	—	—
2nd " 2nd "	—	—	7	406	116	9,947	—	—	—	—	23	1,541
3rd " 1st "	—	—	2	84	156	8,824	—	—	—	—	1	16
3rd " 2nd "	—	—	18	1,568	147	12,966	—	—	—	—	14	1,363
4th " 1st "	—	—	3	295	77	4,534	—	—	1	42	13	672
4th " 2nd "	—	—	—	—	63	4,052	—	—	1	84	9	560
5th " 1st "	—	—	—	—	45	2,933	—	—	—	—	—	—
5th " 2nd "	—	—	4	165	180	11,047	—	—	—	—	11	768
6th " 1st "	—	—	2	200	98	4,061	—	—	—	—	2	140
6th " 2nd "	—	—	7	1,288	116	8,323	—	—	—	—	19	1,197
7th " 1st "	—	—	1	182	12	769	—	—	1	28	7	294
7th " 2nd "	—	—	1	672	126	5,397	—	—	—	—	1	56
8th " 1st "	—	—	17	955	93	3,450	—	—	—	—	1	53
8th " 2nd "	—	—	1	14	82	2,958	—	—	—	—	8	586
9th " 1st "	—	—	1	84	127	7,108	—	—	—	—	5	189
9th " 2nd "	1	14	4	126	84	4,542	—	—	—	—	7	630

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1865—*cont.*

During 1865.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
10th Foot 1st Battalion	—	—	1	168	177	7,672	—	—	—	—	27	1,541
10th Foot 2nd „	—	—	1	56	61	2,938	—	—	5	168	22	1,190
11th „ 1st „	—	—	—	—	23	5,029	—	—	2	84	14	1,443
11th „ 2nd „	—	—	—	—	42	2,572	—	—	1	42	13	553
12th „ 1st „	—		1	365	160	15,278	—	—	2	336	19	1,236
12th „ 2nd „	—	—	—	—	35	3,237	—	—	2	231	12	1,040
13th „ 1st „	—	—	—	—	100	4,661	—	—	1	336	—	—
13th „ 2nd „	—	—	—	—	28	1,313	—	—	—	—	9	318
14th „ 1st „	—	—	1	112	90	6,048	—	—	—	—	—	—
14th „ 2nd „	—	—	1	42	166	13,592	—	—	—	—	3	130
15th „ 1st „	—	—	—	—	57	7,514	—	—	—	—	10	532
15th „ 2nd „	—	—	2	294	83	5,225	—	—	2	336	7	523
16th „ 1st „	—	—	1	42	89	8,119	—	—	—	—	6	2,079
16th „ 2nd „	—	—	—	—	147	16,683	—	—	—	—	9	385
17th „ 1st „	—	—	1	14	136	9,245	—	—	1	14	2	126
17th „ 2nd „	—	—	—	—	76	7,990	—	—	—	—	13	737
18th „ 1st „	—	—	2	268	103	6,723	—	—	—	—	24	775
18th „ 2nd „	—	—	—	—	101	11,097	—	—	—	—	8	588
19th „ 1st „	—	—	—	—	17	2,249	—	—	—	—	9	539
19th „ 2nd „	—	—	—	—	37	1,959	—	—	2	56	15	1,110
20th „ 1st „	—	—	—	—	24	2,550	—	—	2	196	14	899
20th „ 2nd „	—	—	2	28	108	Not known	—	—	2	49	14	807
21st „ 1st „	—	—	—	—	61	2,287	—	—	—	—	1	28
21st „ 2nd „	—	—	1	Not kn.	53	3,380	—	—	2	28	14	1,344
22nd „ 1st „	—	—	—	—	70	3,466	—	—	1	42	22	840
22nd „ 2nd „	—	—	2	210	37	2,606	—	—	3	364	9	490
23rd „ 1st „	—	—	—	—	24	1,966	—	—	—	—	10	522
23rd „ 2nd „	—	—	—	—	79	3,677	—	—	1	28	11	868
24th „ 1st „	—	—	1	64	67	3,128	—	—	—	—	—	—
24th „ 2nd „	—	—	—	—	30	5,486	—	—	—	—	11	616
25th „ 1st „	—	—	2	378	174	2,211	—	—	1	7	7	756
25th „ 2nd „	—	—	2	210	145	8,659	—	—	—	—	22	1,008
26th „	—	—	2	70	50	4,873	—	—	1	28	9	505
27th „	—	—	1	84	50	3,118	—	—	—	—	3	154
28th „	—	—	2	119	57	3,154					2	107
29th „	—	—	4	84	53	3,201	—	—	1	42	18	1,582
30th „	—	—	4	168	132	7,627	—	—	—	—	23	1,036
31st „	—	—	—	—	84	4,649	—	—	—	—	1	56
32nd „	—	—	—	—	107	6,282	—	—	—	—	16	778
33rd „	—	—	—	—	53	5,222	—	—	—	—	8	674
34th „	—	—	—	—	12	1,442	—	—	3	211	9	363
35th „	—	—	—	—	7	511	—	—	—	—	7	498
36th „	—	—	3	Not kn.	52	2,876	—	—	—	—	20	1,205
37th „	—	—	1	42	58	3,226	—	—	—	—	—	—
38th „	—	—	1	42	3	1,122	—	—	2	70	15	744
39th „	—	—	—	—	121	5,440	—	—	—	—	2	84
40th „	—	—	—	—	99	6,748	—	—	1	42	18	1,176
41st „	—	—	—	—	77	3,635	—	—	—	—	20	2,747
42nd „	—	—	—	—	14	726	—	—	—	—	18	1,106
43rd „	—	—	1	112	42	2,427	—	—	4	66	23	2,837
44th „	—	—	—	—	24	1,138	—	—	—	—	14	411
45th „	—	—	—	—	56	4,847	—	—	2	280	11	987
46th „	—	—	—	—	37	1,716	—	—	—	—	4	113
47th „	—	—	3	126	109	6,544	—	—	—	—	9	386
48th „	—	—	—	—	80	4,517	—	—	—	—	2	56
49th „	—	—	2	210	48	2,798	—	—	1	56	5	434
50th „	—	—	—	—	67	3,081	—	—	2	84	17	756
51st „	—	—	—	—	21	1,371	—	—	1	42	16	882
52nd „	—	—	10	294	59	2,908	—	—	—	—	—	—
53rd „	—	—	1	42	53	3,976	—	—	—	—	—	—
54th „	—	—	—	—	40	1,825	—	—	4	Not kn.	20	1,637
55th „	—	—	—	—	45	2,352	—	—	2	154	19	2,646
56th „	—	—	2	56	20	3,087	—	—	—	—	17	784
57th „	2	28	7	168	50	4,625	—	—	—	—	7	392
58th „	—	—	1	182	38	3,122	—	—	1	42	38	2,231
59th „	—	—	2	70	102	4,901	—	—	—	—	2	112
60th „ 1st Battalion	—	—	—	—	79	3,614	—	—	—	—	—	—
60th „ 2nd „	—	—	—	—	89	6,148	—	—	—	—	—	—
60th „ 3rd „	—	—	—	—	51	2,570	—	—	2	42	20	1,076
60th „ 4th „	—	—	—	—	71	10,025	—	—	1	42	10	630
61st „	—	—	17	Not kn.	74	4,362	—	—	—	—	1	28
62nd „	—	—	—	—	59	3,765	—	—	1	84	1	365
63rd „	—	—	—	—	143	8,935	—	—	—	—	7	658
64th „	—	—	3	336	106	6,309	—	—	—	—	—	—
65th „	—	—	2	70	62	7,140	—	—	1	42	13	658
66th „	—	—	3	126	58	2,124	—	—	—	—	—	—
67th „	—	—	—	—	161	19,171	—	—	—	—	12	784
68th „	—	—	6	518	127	10,688	—	—	1	42	8	306
69th „	—	—	—	—	63	2,961	—	—	—	—	—	—
70th „	—	—	—	—	92	4,410	—	—	2	84	12	728
71st „	—	—	—	—	75	3,407	—	—	—	—	8	539
72nd „	—	—		—	48	2,662	—	—	3	294	19	934
73rd „	—	—	2	84	63	842	—	—	—	—	1	56
74th „	—	—	2	168	102	6,153	—	—	—	—	1	56

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1865—*cont.*

During 1865.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment. with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
75th Foot	—	—	3	252	78	4,679	—	—	—	—	2	36
76th „	—	—	1	14	52	2,137	—	—	1	126	12	728
77th „	—	—	1	730	36	4,641	—	—	1	113	14	840
78th „	—	—	4	560	65	2,415	—	—	—	—	13	938
79th „	—	—	—	—	8	785	—	—	—	—	8	504
80th „	—	—	—	—	31	1,563	—	—	1	42	14	1,360
81st „	—	—	—	—	36	1,050	—	—	—	—	8	336
82nd „	—	—	—	—	31	3,198	—	—	—	—	4	420
83rd „	—	—	—	—	77	5,791	—	—	—	—	—	—
84th „	—	—	1	42	105	5,392	—	—	—	—	20	1,400
85th „	—	—	—	—	112	6,515	—	—	—	—	—	—
86th „	—	—	—	—	69	3,552	—	—	—	—	9	644
87th „	—	—	1	42	50	2,534	—	—	—	—	—	—
88th „	—	—	—	—	48	3,450	—	—	—	—	7	255
89th „	—	—	1	28	57	3,615	—	—	—	—	3	264
90th „	—	—	2	105	15	969	—	—	—	—	32	2,009
91st „	—	—	—	—	30	1,349	—	—	1	14	17	602
92nd „	—	—	1	42	84	5,243	—	—	—	—	2	84
93rd „	—	—	—	—	21	983	—	—	2	84	27	1,169
94th „	—	—	1	42	42	4,353	—	—	—	—	12	553
95th „	—	—	1	42	58	4,280	—	—	—	—	—	—
96th „	—	—	6	266	69	4,104	—	—	1	42	28	2,248
97th „	—	—	8	216	55	4,222	—	—	—	—	8	301
98th „	—	—	1	7	31	2,929	—	—	—	—	10	504
99th „	—	—	—	—	101	5,564	—	—	1	42	10	488
100th „	1	7	11	413	88	4,752	—	—	3	252	23	1,015
101st „	—	—	1	42	13	6,685	—	—	—	—	13	702
102nd „	—	—	16	Not kn.	38	3,332	—	—	2	56	12	1,106
103rd „	—	—	—	—	30	2,667	—	—	—	—	3	617
104th „	—	—	—	—	30	2,361	—	—	1	42	6	332
105th „	—	—	4	63	72	5,018	—	—	—	—	11	543
106th „	—	—	3	126	13	1,504	—	—	—	—	18	1,036
107th „	—	—	1	42	35	5,475	—	—	1	56	4	152
108th „	—	—	4	252	71	4,222	—	—	1	168	21	1,550
109th „	—	—	—	—	42	4,069	—	—	—	—	10	574
Rifle Brigade 1st Battalion	—	—	2	Not kn.	79	5,214	—	—	2	28	19	1,190
Rifle Brigade 2nd „	—	—	—	—	30	2,104	1	14	—	—	3	196
Rifle Brigade 3rd „	—	—	—	—	10	2,286	—	—	—	—	6	378
Rifle Brigade 4th „	—	—	1	42	131	12,248	—	—	—	—	5	182
TOTAL INFANTRY OF THE LINE	5	63	251	15,189	9,758	649,273	1	14	87	5,282	1,408	91,663
1st West India Regiment	—	—	2	68	68	6,875	—	—	—	—	—	—
2nd „ „	—	—	4	201	53	8,783	—	—	—	—	—	—
3rd „ „	—	—	—	—	40	Not known	—	—	—	—	—	—
4th „ „	—	—	6	392	42	3,223	—	—	—	—	—	—
Ceylon Rifle Regiment	—	—	2	84	32	2,055	—	—	—	—	—	—
Cape Mounted Riflemen	—	—	1	336	74	8,632	—	—	—	—	—	—
Royal Malta Fencible Artillery	—	—	—	—	21	1,072	—	—	—	—	—	—
Royal Canadian Rifle Regiment	—	—	1	42	118	4,595	—	—	—	—	—	—
TOTAL COLONIAL CORPS	—	—	16	1,123	448	35,235	—	—	—	—	—	—

ABSTRACT.

During 1865.	Service Companies.						REMARKS.
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	
HOUSEHOLD CAVALRY	—	—	4	266	19	1,432	N.B.—The difference between the number of "Cases" in this Return and the number of "Imprisonments" in Return No. 1 is caused by non-commissioned officers who were sentenced to imprisonment as well as reduction to the ranks being shown under the latter heading in Return No. 1.
CAVALRY OF THE LINE	—	—	68	4,594	925	65,727	
ROYAL ARTILLERY	—	—	106	6,654	2,628	198,314	
ROYAL ENGINEERS	—	—	3	Not known	351	19,642	
MILITARY TRAIN	—	—	11	322	243	18,059	
FOOT GUARDS	—	—	25	2,966	447	28,927	
INFANTRY OF THE LINE	6	77	338	20,471	11,166	740,936	
COLONIAL CORPS	—	—	16	1,123	448	35,235	
GENERAL TOTAL	6	77	571	36,396	16,227	1,108,272	

W. PAULET,
Adjutant-General.

No. 11.

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1866, in continuation of Return No. 2, dated 4th July 1868.

Adjutant-General's Office, 7th April 1869.

During 1866.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
1st Life Guards	—	—	—	—	2	136	—	—	—	—	—	—
2nd "	—	—	—	—	5	158	—	—	—	—	—	—
Royal Horse Guards	—	—	2	105	8	687	—	—	—	—	—	—
TOTAL HOUSEHOLD CAVALRY	—	—	2	105	15	981	—	—	—	—	—	—
1st Dragoon Guards	—	—	6	14	61	2,270	—	—	—	—	11	1,225
2nd " "	—	—	2	84	15	1,364	—	—	—	—	8	560
3rd " "	—	—	—	—	9	816	—	—	—	—	4	147
4th " "	—	—	1	42	48	3,862	—	—	—	—	—	—
5th " "	—	—	8	406	59	3,010	—	—	—	—	—	—
6th " "	—	—	—	—	26	2,375	—	—	—	—	—	—
7th " "	—	—	2	84	10	516	—	—	1	42	6	266
1st Dragoons	—	—	—	—	39	1,967	—	—	—	—	—	—
2nd "	—	—	—	—	39	2,912	—	—	—	—	—	—
3rd Hussars	—	—	—	—	36	594	—	—	—	—	—	—
4th "	—	—	—	—	40	2,652	—	—	—	—	—	—
5th Lancers	—	—	—	—	7	673	—	—	—	—	7	1,135
6th Dragoons	—	—	—	—	31	2,392	—	—	2	336	5	161
7th Hussars	—	—	—	—	7	724	—	—	—	—	3	266
8th "	—	—	—	—	35	1,911	—	—	—	—	—	—
9th Lancers	—	—	—	—	34	2,058	—	—	—	—	—	—
10th Hussars	—	—	12	868	31	1,829	—	—	—	—	—	—
11th "	—	—	2	84	42	2,051	—	—	—	—	9	686
12th Lancers	—	—	1	28	22	1,729	—	—	—	—	—	—
13th Hussars	—	—	2	210	25	2,378	—	—	1	28	2	126
14th "	—	—	4	84	62	3,423	—	—	—	—	—	—
15th "	—	—	—	—	26	1,803	—	—	—	—	—	—
16th Lancers	—	—	—	—	34	2,074	—	—	3	252	10	1,989
17th "	—	—	3	280	33	2,006	—	—	—	—	—	—
18th Hussars	—	—	—	—	18	812	—	—	2	84	15	1,191
19th "	—	—	—	—	24	3,166	—	—	1	42	8	560
20th "	—	—	3	256	19	1,133	—	—	—	—	5	1,289
21st "	—	—	—	—	32	3,206	—	—	1	252	11	1,135
TOTAL CAVALRY	—	—	46	2,510	864	55,706	—	—	11	1,036	104	10,736
ROYAL ARTILLERY	2	21	78	7,576	2,200	135,062	—	—	—	—	—	—
ROYAL ENGINEERS	1	Not kn.	6	Not kn.	370	22,534	—	—	—	—	—	—
MILITARY TRAIN	—	—	—	—	230	15,752	—	—	—	—	—	—
Grenadier Guards, 1st Battalion	—	—	2	210	89	5,267	—	—	—	—	—	—
" " 2nd "	—	—	8	846	65	4,650	—	—	—	—	—	—
" " 3rd "	—	—	1	7	123	7,256	—	—	—	—	—	—
Coldstream Guards, 1st Battalion	—	—	5	504	11	699	—	—	—	—	—	—
" " 2nd "	—	—	6	392	46	3,021	—	—	—	—	—	—
Scots Fusilier Guards, 1st Battalion	—	—	—	—	57	5,403	—	—	—	—	—	—
" " 2nd "	—	—	—	—	40	2,304	—	—	—	—	—	—
TOTAL FOOT GUARDS	—	—	22	1,959	431	28,600	—	—	—	—	—	—
1st Foot, 1st Battalion	—	—	2	84	124	4,127	—	—	1	42	14	756
1st Foot, 2nd "	—	—	1	28	47	1,310	—	—	—	—	9	462
2nd " 1st "	—	—	2	112	29	1,526	—	—	—	—	7	742
2nd " 2nd "	—	—	6	336	182	8,140	—	—	—	—	12	798
3rd " 1st "	—	—	1	216	89	5,738	—	—	—	—	17	936
3rd " 2nd "	—	—	12	1,505	200	13,197	—	—	—	—	5	673
4th " 1st "	—	—	2	70	131	5,242	—	—	1	42	32	1,610
4th " 2nd "	—	—	—	—	114	5,730	—	—	—	—	8	434
5th " 1st "	—	—	4	672	40	3,014	—	—	—	—	9	460
5th " 2nd "	—	—	8	147	242	11,838	—	—	—	—	10	836
6th " 1st "	—	—	5	826	114	5,080	—	—	—	—	—	—
6th " 2nd "	—	—	15	742	153	8,359	—	—	—	—	12	910
7th " 1st "	—	—	—	—	21	1,265	—	—	—	—	15	838
7th " 2nd "	—	—	4	217	170	8,255	—	—	1	168	4	420
8th " 1st "	—	—	14	588	93	4,226	—	—	—	—	8	784
8th " 2nd "	—	—	2	350	96	3,289	—	—	—	—	8	350
9th " 1st "	—	—	4	182	217	10,983	—	—	—	—	8	336
9th " 2nd "	1	14	6	462	179	9,762	—	—	—	—	10	1,022

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1866—*cont.*

During 1866.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
10th Foot 1st Battalion	1	14	4	154	160	10,112	—	—	—	—	22	2,979
10th Foot 2nd „	—	—	2	28	142	9,138	—	—	2	Not kn.	17	1,022
11th „ 1st „	—	—	—	—	87	4,039	—	—	—	—	10	938
11th „ 2nd „	—	—	17	841	72	3,698	—	—	—	—	29	1,484
12th „ 1st „	—	—	1	42	168	15,870	—	—	1	14	28	1,452
12th „ 2nd „	—	—	—	—	75	4,959	—	—	1	42	12	721
13th „ 1st „	—	—	1	14	73	3,451	—	—	—	—	—	—
13th „ 2nd „	—	—	—	—	46	2,618	—	—	1	205	18	1,035
14th „ 1st „	—	—	1	336	73	5,055	—	—	—	—	—	—
14th „ 2nd „	—	—	5	266	278	14,424	—	—	—	—	7	298
15th „ 1st „	—	—	—	—	124	7,774	—	—	1	56	10	488
15th „ 2nd „	—	—	4	245	98	5,022	—	—	2	70	14	910
16th „ 1st „	—	—	2	53	205	10,841	—	—	—	—	18	1,610
16th „ 2nd „	—	—	—	—	122	11,797	—	—	—	—	9	595
17th „ 1st „	—	—	—	—	99	5,214	—	—	—	—	—	—
17th „ 2nd „	—	—	2	154	121	6,759	—	—	—	—	7	377
18th „ 1st „	—	—	6	282	168	9,546	—	—	—	—	15	1,161
18th „ 2nd „	—	—	—	—	92	13,773	—	—	—	—	3	90
19th „ 1st „	—	—	1	42	24	1,450	—	—	—	—	13	743
19th „ 2nd „	—	—	2	336	55	3,229	—	—	3	112	23	1,666
20th „ 1st „	—	—	—	—	65	2,282	—	—	2	210	3	112
20th „ 2nd „	—	—	12	280	131	Not known	—	—	3	238	14	1,064
21st „ 1st „	—	—	—	—	90	1,656	—	—	—	—	—	—
21st „ 2nd „	—	—	4	42	74	3,818	—	—	—	—	24	3,099
22nd „ 1st „	—	—	21	—	58	8,365	—	—	2	28	28	1,421
22nd „ 2nd „	—	—	2	84	98	5,523	—	—	1	84	14	644
23rd „ 1st „	—	—	—	—	39	1,338	—	—	2	336	15	840
23rd „ 2nd „	—	—	—	—	131	6,743	—	—	—	—	4	308
24th „ 1st „	—	—	4	378	52	Not known	—	—	—	—	8	532
24th „ 2nd „	—	—	1	21	36	1,875	—	—	—	—	13	798
25th „ 1st „	—	—	—	—	158	7,921	—	—	—	—	15	1,071
25th „ 2nd „	—	—	4	154	212	11,264	—	—	—	—	32	1,897
26th „	—	—	2	84	28	2,672	—	—	—	—	36	2,156
27th „	—	—	—	—	39	2,242	—	—	—	—	1	84
28th „	—	—	—	—	105	5,256	—	—	—	—	—	—
29th „	—	—	4	308	60	2,444	—	—	1	16	15	983
30th „	—	—	—	—	175	4,659	—	—	2	84	15	903
31st „	—	—	—	—	79	4,451	—	—	—	—	—	—
32nd „	—	—	1	42	79	4,166	—	—	—	—	16	1,456
33rd „	—	—	—	—	54	3,676	—	—	—	—	13	845
34th „	—	—	—	—	25	1,463	—	—	—	—	11	560
35th „	—	—	—	—	8	342	—	—	—	—	14	609
36th „	—	—	—	—	40	2,189	—	—	—	—	9	812
37th „	—	—	—	—	34	1,991	—	—	—	—	6	217
38th „	—	—	—	—	8	602	—	—	3	112	20	868
39th „	—	—	3	42	97	6,345	—	—	—	—	—	—
40th „	—	—	1	168	86	5,557	—	—	—	—	8	651
41st „	—	—	—	—	26	1,574	—	—	—	—	29	1,945
42nd „	—	—	—	—	37	1,552	—	—	—	—	24	1,234
43rd „	—	—	7	84	140	8,016	—	—	4	154	14	1,155
44th „	—	—	2	84	149	5,878	—	—	—	—	2	98
45th „	—	—	—	—	58	4,332	—	—	—	—	16	1,062
46th „	—	—	—	—	67	3,580	—	—	—	—	9	182
47th „	—	—	1	168	173	8,516	—	—	—	—	10	574
48th „	—	—	—	—	52	3,018	—	—	—	—	—	—
49th „	—	—	—	—	36	1,566	—	—	—	—	10	637
50th „	—	—	3	840	129	7,540	—	—	2	84	29	2,436
51st „	—	—	—	—	14	766	—	—	3	196	16	975
52nd „	—	—	6	420	134	6,489	—	—	—	—	—	—
53rd „	—	—	1	84	82	4,045	—	—	—	—	8	504
54th „	—	—	2	63	91	4,453	—	—	—	—	7	371
55th „	—	—	—	—	42	1,988	—	—	—	—	21	1,288
56th „	—	—	2	196	84	4,078	—	—	—	—	3	105
57th „	13	105	19	756	161	7,493	—	—	—	—	5	210
58th „	—	—	1	112	32	2,127	—	—	—	—	21	1,698
59th „	—	—	1	42	56	3,958	—	—	—	—	—	—
60th „ 1st Battalion	—	—	4	196	63	3,195	—	—	1	42	11	1,300
60th „ 2nd „	—	—	2	Not kn.	46	4,257	—	—	—	—	—	—
60th „ 3rd „	—	—	1	168	102	3,667	—	—	—	—	22	1,456
60th „ 4th „	—	—	—	—	96	5,787	—	—	—	—	7	518
61st „	—	—	12	Not kn.	115	7,798	—	—	—	—	4	448
62nd „	—	—	—	—	42	3,958	—	—	—	—	—	—
63rd „	—	—	—	—	121	7,568	—	—	—	—	—	—
64th „	—	—	1	42	64	3,304	—	—	—	—	1	42
65th „	—	—	15	712	88	5,575	—	—	—	—	—	—
66th „	—	—	3	196	87	4,523	—	—	—	—	—	—
67th „	—	—	—	—	164	7,282	—	—	—	—	3	465
68th „	—	—	3	132	88	3,594	—	—	—	—	4	172
69th „	—	—	—	—	132	8,520	—	—	—	—	—	—
70th „	—	—	—	—	78	3,956	—	—	—	—	2	168
71st „	—	—	1	42	129	5,432	—	—	—	—	—	—
72nd „	—	—	3	126	108	5,465	—	—	—	—	12	679
73rd „	—	—	—	—	54	2,999	—	—	—	—	1	56
74th „	—	—	5	595	73	4,284	—	—	—	—	—	—

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1866—*cont.*

During 1866.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
75th Foot	—	—	13	1,148	95	4,957	—	—	—	—	—	—
76th „	—	—	1	365	57	6,800	—	—	2	154	10	567
77th „	—	—	—	—	42	2,563	—	—	—	—	17	1,169
78th „	—	—	3	288	125	5,539	—	—	1	42	11	658
79th „	—	—	—	—	13	417	—	—	—	—	13	812
80th „	—	—	1	168	89	3,862	—	—	2	60	2	60
81st „	—	—	—	—	42	2,477	—	—	—	—	—	—
82nd „	—	—	—	—	61	2,683	—	—	—	—	5	231
83rd „	—	—	—	—	61	3,653	—	—	—	—	—	—
84th „	—	—	—	—	104	4,306	—	—	2	84	10	418
85th „	—	—	2	217	133	8,597	—	—	—	—	—	—
86th „	—	—	—	—	99	4,407	—	—	1	84	10	1,408
87th „	—	—	3	154	94	3,744	—	—	—	—	7	585
88th „	—	—	4	Not kn.	62	5,225	—	—	—	—	13	589
89th „	—	—	—	—	80	3,932	—	—	—	—	—	—
90th „	—	—	—	—	16	1,498	—	—	—	—	35	1,819
91st „	—	—	—	—	75	1,967	—	—	—	—	24	1,502
92nd „	—	—	2	84	51	2,764	—	—	—	—	—	—
93rd „	—	—	1	168	18	1,267	—	—	—	—	30	1,534
94th „	—	—	—	—	52	4,492	—	—	1	84	12	616
95th „	—	—	—	—	101	5,581	—	—	—	—	3	56
96th „	—	—	3	56	64	3,322	—	—	1	84	31	1,698
97th „	—	—	—	—	59	3,641	—	—	1	14	19	809
98th „	—	—	—	—	36	2,070	—	—	—	—	8	1,002
99th „	—	—	—	—	147	9,174	—	—	—	—	14	934
100th „	—	—	18	627	89	3,200	—	—	—	—	36	1,871
101st „	—	—	1	42	9	594	—	—	1	42	13	924
102nd „	—	—	2	112	40	5,777	—	—	2	84	6	574
103rd „	—	—	—	—	20	1,970	—	—	—	—	1	28
104th „	—	—	2	387	39	3,984	—	—	—	—	4	252
105th „	—	—	8	336	117	6,838	—	—	—	—	23	1,104
106th „	—	—	6	—	51	2,360	—	—	—	—	10	782
107th „	—	—	—	—	34	4,772	—	—	—	—	7	392
108th „	—	—	2	192	116	4,610	—	—	—	—	12	416
109th „	—	—	—	—	48	3,459	—	—	—	—	21	1,282
Rifle Brigade 1st Battalion	—	—	1	7	97	5,498	—	—	1	168	12	539
Rifle Brigade 2nd „	—	—	—	—	43	2,130	—	—	—	—	4	119
Rifle Brigade 3rd „	—	—	—	—	6	392	—	—	—	—	9	357
Rifle Brigade 4th „	—	—	1	56	146	8,328	—	—	—	—	13	826
TOTAL INFANTRY	15	133	364	20,398	12,428	683,673	—	—	55	3,235	1,513	97,517
1st West India Regiment	—	—	1	224	77	6,758	—	—	—	—	—	—
2nd „ „	—	—	1	42	39	3,292	—	—	—	—	—	—
3rd „ „	—	—	4	Not kn.	44	Not known	—	—	—	—	—	—
4th „ „	—	—	5	336	22	1,148	—	—	—	—	—	—
Ceylon Rifle Regiment	—	—	1	42	46	3,896	—	—	—	—	—	—
Cape Mounted Riflemen	—	—	3	238	111	8,840	—	—	—	—	—	—
Royal Malta Fencible Artillery	—	—	1	42	39	2,003	—	—	—	—	—	—
Royal Canadian Rifle Regiment	—	—	—	—	106	7,362	—	—	—	—	—	—
TOTAL COLONIAL CORPS	—	—	16	924	484	33,299	—	—	—	—	—	—

ABSTRACT.

During 1866.	Service Companies.						REMARKS.
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	
HOUSEHOLD CAVALRY	—	—	2	105	15	981	N.B.—The difference between the number of "Cases" in this Return and the number of "Imprisonments" in Return No. 2 is caused by non-commissioned officers who were sentenced to imprisonment as well as reduction to the ranks, being shown under the latter heading in Return No. 2.
CAVALRY OF THE LINE	—	—	57	3,546	968	66,442	
ROYAL ARTILLERY	2	21	78	7,576	2,200	135,062	
ROYAL ENGINEERS	1	—	6	—	370	22,534	
MILITARY TRAIN	—	—	—	—	230	15,752	
FOOT GUARDS	—	—	22	1,959	431	28,600	
INFANTRY OF THE LINE	15	133	419	23,633	13,941	781,190	
COLONIAL CORPS	—	—	16	924	484	33,299	
GENERAL TOTAL	18	154	600	37,743	18,639	1,083,860	

W. PAULET,
Adjutant-General.

No. 12.

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1867, in continuation of Return No. 3, dated 4th July 1868.

Adjutant-General's Office, 7th April 1869.

During 1867.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
1st Life Guards	—	—	1	28	4	252	—	—	—	—	—	—
2nd "	—	—	—	—	5	337	—	—	—	—	—	—
Royal Horse Guards	—	—	1	42	9	995	—	—	—	—	—	—
TOTAL HOUSEHOLD CAVALRY	—	—	2	70	18	1,584	—	—	—	—	—	—
1st Dragoon Guards	—	—	—	—	50	3,192	—	—	—	—	—	—
2nd " "	—	—	—	—	7	161	—	—	—	—	4	1,430
3rd " "	—	—	—	—	21	893	—	—	—	—	11	1,241
4th " "	—	—	—	—	63	3,145	—	—	—	—	—	—
5th " "	—	—	2	84	40	3,540	—	—	—	—	—	—
6th " "	—	—	—	—	21	1,503	—	—	—	—	—	—
7th " "	—	—	2	84	26	935	—	—	3	449	10	618
1st Dragoons	—	—	24	1,918	—	—	—	—	—	—	—	—
2nd "	—	—	—	—	43	2,904	—	—	—	—	—	—
3rd Hussars	—	—	1	42	39	2,698	—	—	—	—	—	—
4th "	—	—	—	—	39	2,142	—	—	—	—	10	910
5th Lancers	—	—	—	—	3	126	—	—	1	42	5	884
6th Dragoons	—	—	4	119	39	3,022	—	—	—	—	6	217
7th Hussars	—	—	—	—	6	344	—	—	—	—	9	644
8th "	—	—	8	364	63	2,576	—	—	—	—	—	—
9th Lancers	—	—	3	245	49	3,044	—	—	—	—	—	—
10th Hussars	—	—	4	294	36	2,098	—	—	—	—	—	—
11th "	—	—	—	—	18	1,118	—	—	—	—	13	924
12th Lancers	—	—	—	—	25	1,188	—	—	—	—	—	—
13th Hussars	—	—	—	—	17	1,140	—	—	2	407	29	3,365
14th "	—	—	7	350	30	2,198	—	—	—	—	—	—
15th "	—	—	—	—	23	2,093	—	—	—	—	—	—
16th Lancers	—	—	—	—	31	1,281	—	—	1	42	9	679
17th "	—	—	—	—	62	3,652	—	—	—	—	—	—
18th Hussars	—	—	—	—	23	574	—	—	1	28	19	1,876
19th "	—	—	—	—	32	1,538	—	—	1	42	13	1,390
20th "	—	—	1	42	12	756	—	—	2	84	15	1,197
21st "	—	—	—	—	17	1,598	—	—	2	84	16	1,514
TOTAL CAVALRY	—	—	56	3,542	825	49,461	—	—	13	1,178	169	16,889
ROYAL ARTILLERY	3	38	81	1,750	2,512	146,493	—	—	—	—	—	—
ROYAL ENGINEERS	—	—	16	Not kn.	421	24,693	—	—	—	—	—	—
MILITARY TRAIN	—	—	3	70	172	12,764	—	—	—	—	—	—
Grenadier Guards, 1st Battalion	—	—	4	406	81	4,060	—	—	—	—	—	—
" " 2nd "	—	—	2	210	47	3,332	—	—	—	—	—	—
" " 3rd "	—	—	2	210	58	3,882	—	—	—	—	—	—
Coldstream Guards, 1st Battalion	—	—	—	—	40	3,192	—	—	—	—	—	—
" " 2nd "	—	—	3	533	44	3,165	—	—	—	—	—	—
Scots Fusilier Guards, 1st Battalion	—	—	2	266	68	5,000	—	—	—	—	—	—
" " 2nd "	—	—	—	—	36	1,904	—	—	—	—	—	—
TOTAL FOOT GUARDS	—	—	13	1,625	374	24,535	—	—	—	—	—	—
1st Foot, 1st Battalion	—	—	7	602	59	1,922	—	—	1	42	48	2,404
1st Foot, 2nd "	—	—	—	—	21	735	—	—	2	126	42	2,051
2nd " 1st "	—	—	—	—	18	1,021	—	—	—	—	32	2,291
2nd " 2nd "	—	—	2	210	57	3,101	—	—	—	—	—	—
3rd " 1st "	—	—	—	—	44	2,045	—	—	—	—	44	2,419
3rd " 2nd "	—	—	7	294	73	5,685	—	—	—	—	—	—
4th " 1st "	—	—	—	—	136	6,131	—	—	3	546	22	1,512
4th " 2nd "	—	—	—	—	154	7,890	—	—	—	—	16	686
5th " 1st "	—	—	1	168	24	1,115	—	—	—	—	13	1,099
5th " 2nd "	—	—	6	112	199	9,989	—	—	—	—	2	196
6th " 1st "	—	—	1	42	69	6,194	—	—	—	—	2	210
6th " 2nd "	—	—	8	448	114	5,586	—	—	—	—	4	252
7th " 1st "	—	—	—	—	17	2,250	—	—	1	84	21	1,325
7th " 2nd "	—	—	2	84	127	9,588	—	—	—	—	2	112
8th " 1st "	—	—	6	454	112	4,480	—	—	1	42	17	1,961
8th " 2nd "	—	—	6	119	129	4,998	—	—	—	—	3	140
9th " 1st "	—	—	—	—	225	12,912	—	—	—	—	4	560
9th " 2nd "	—	—	2	392	182	10,869	—	—	—	—	2	252

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1867—*cont.*

During 1867.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
10th Foot 1st Battalion	—	—	2	196	205	16,744	—	—	1	168	12	630
10th Foot 2nd "	—	—	1	84	151	6,945	—	—	—	—	14	770
11th " 1st "	—	—	—	—	50	2,557	—	—	1	14	25	1,352
11th " 2nd "	—	—	20	1,288	132	11,035	—	—	2	101	32	1,104
12th " 1st "	—	—	5	210	85	6,280	—	—	2	84	17	861
12th " 2nd "	—	—	—	—	82	3,558	—	—	—	—	30	1,247
13th " 1st "	—	—	3	294	83	4,540	—	—	—	—	10	525
13th " 2nd "	—	—	1	112	59	2,537	—	—	—	—	3	210
14th " 1st "	—	—	3	1,123	110	4,479	—	—	1	84	16	2,929
14th " 2nd "	—	—	56	1,254	358	20,127	—	—	—	—	—	—
15th " 1st "	—	—	—	—	165	11,606	—	—	1	141	17	894
15th " 2nd "	—	—	5	406	137	7,070	—	—	—	—	2	28
16th " 1st "	—	—	5	280	98	5,436	—	—	3	70	23	2,004
16th " 2nd "	—	—	8	245	104	10,670	—	—	—	—	25	1,520
17th " 1st "	—	—	—	—	91	5,936	—	—	—	—	—	—
17th " 2nd "	—	—	1	336	70	3,403	—	—	—	—	12	491
18th " 1st "	—	—	2	126	167	13,038	—	—	—	—	—	—
18th " 2nd "	—	—	—	—	104	6,602	—	—	—	—	6	252
19th " 1st "	—	—	2	425	7	773	—	—	—	—	15	1,071
19th " 2nd "	—	—	—	—	41	1,933	—	—	—	—	26	1,818
20th " 1st "	—	—	3	252	65	3,156	—	—	—	—	3	84
20th " 2nd "	—	—	18	742	103	Not known	—	—	—	—	6	266
21st " 1st "	—	—	—	—	69	3,677	—	—	—	—	—	—
21st " 2nd "	2	Not kn.	—	—	16	4,075	—	—	—	—	25	1,869
22nd " 1st "	—	—	26	416	111	6,815	—	—	2	28	19	938
22nd " 2nd "	—	—	2	84	79	4,814	—	—	—	—	2	210
23rd " 1st "	—	—	—	—	18	1,071	—	—	3	308	15	881
23rd " 2nd "	—	—	—	—	132	5,559	—	—	1	168	—	—
24th " 1st "	—	—	9	504	79	Not known	—	—	—	—	40	1,754
24th " 2nd "	—	—	—	—	32	2,112	—	—	—	—	33	2,179
25th " 1st "	—	—	—	—	82	3,970	—	—	—	—	19	1,009
25th " 2nd "	—	—	3	126	167	5,617	—	—	—	—	38	2,811
26th "	—	—	—	—	53	2,720	—	—	1	336	54	3,990
27th "	—	—	1	42	81	2,517	—	—	—	—	14	501
28th "	—	—	2	28	51	3,270	—	—	—	—	—	—
29th "	—	—	7	294	142	6,617	—	—	1	42	24	1,201
30th "	—	—	1	672	119	4,325	—	—	—	—	12	798
31st "	—	—	1	21	79	3,971	—	—	2	98	17	1,034
32nd "	—	—	1	189	58	4,462	—	—	—	—	12	722
33rd "	—	—	—	—	57	2,345	—	—	—	—	18	1,113
34th "	—	—	1	28	35	2,402	—	—	—	—	13	1,044
35th "	—	—	—	—	5	140	—	—	—	—	19	1,149
36th "	—	—	—	—	17	572	—	—	—	—	10	609
37th "	—	—	—	—	67	1,673	—	—	—	—	33	1,589
38th "	—	—	1	21	12	553	—	—	—	—	22	953
39th "	—	—	4	59	67	6,889	—	—	—	—	—	—
40th "	—	—	7	784	73	3,900	—	—	—	—	—	—
41st "	—	—	1	42	40	3,133	—	—	—	—	18	1,296
42nd "	—	—	1	82	17	1,171	—	—	—	—	33	3,505
43rd "	—	—	—	—	80	3,954	—	—	—	—	—	—
44th "	—	—	—	—	107	5,408	—	—	—	—	—	—
45th "	Return not received.						—	—	1	112	21	1,502
46th "	—	—	—	—	44	1,822	—	—	—	—	6	128
47th "	—	—	—	—	186	8,045	—	—	1	112	19	1,310
48th "	—	—	1	42	47	2,539	—	—	—	—	—	—
49th "	—	—	—	—	41	1,605	—	—	—	—	12	1,036
50th "	1	14	2	168	172	7,880	—	—	2	21	20	2,507
51st "	—	—	18	742	178	7,621	—	—	—	—	10	420
52nd "	—	—	3	238	85	6,475	—	—	—	—	—	—
53rd "	—	—	—	—	117	8,525	—	—	—	—	10	620
54th "	—	—	2	168	103	4,870	—	—	—	—	—	—
55th "	—	—	—	—	63	1,988	—	—	—	—	25	3,386
56th "	—	—	—	—	104	4,708	—	—	—	—	—	—
57th "	—	—	5	302	93	4,095	—	—	—	—	8	403
58th "	—	—	—	—	28	1,674	—	—	1	21	20	1,555
59th "	—	—	3	163	67	3,066	—	—	2	56	24	1,829
60th " 1st Battalion	—	—	6	196	60	2,474	—	—	—	—	19	1,925
60th " 2nd "	—	—	—	—	56	3,758	—	—	—	—	7	462
60th " 3rd "	—	—	—	—	95	3,414	—	—	—	—	22	1,050
60th " 4th "	—	—	2	397	65	6,274	—	—	—	—	8	1,104
61st "	—	—	12	Not kn.	129	9,565	—	—	1	42	12	770
62nd "	—	—	2	140	70	5,318	—	—	—	—	—	—
63rd "	—	—	—	—	122	6,548	—	—	—	—	—	—
64th "	—	—	3	196	69	3,087	—	—	—	—	32	2,051
65th "	—	—	—	—	110	6,727	—	—	—	—	—	—
66th "	—	—	5	322	125	6,153	—	—	—	—	—	—
67th "	—	—	—	—	53	3,381	—	—	—	—	—	—
68th "	—	—	1	112	89	3,780	—	—	—	—	—	—
69th "	—	—	—	—	86	5,672	—	—	—	—	8	672
70th "	—	—	—	—	49	3,140	—	—	—	—	—	—
71st "	—	—	—	—	86	4,475	—	—	—	—	—	—
72nd "	—	—	—	—	130	7,009	—	—	—	—	—	—
73rd "	—	—	—	—	84	3,431	—	—	—	—	9	53
74th "	—	—	4	196	75	5,740	—	—	—	—	—	—

RETURN showing the Number of Days' Imprisonment inflicted by Courts-martial during 1867—*cont.*

During 1867.	Service Companies.						Depôt.					
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.	
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.	Cases.	Days.
75th Foot	—	—	1	42	155	7,288	—	—	—	—	11	616
76th „	—	—	2	168	112	3,962	—	—	1	84	4	145
77th „	—	—	—	—	19	802	—	—	—	—	30	1,007
78th „	—	—	—	—	120	5,836	—	—	—	—	15	973
79th „	—	—	1	42	18	749	—	—	—	—	24	2,030
80th „	—	—	—	—	112	5,711	—	—	—	—	—	—
81st „	—	—	—	—	28	2,767	—	—	—	—	—	—
82nd „	—	—	4	343	32	2,830	—	—	1	72	11	597
83rd „	—	—	3	56	90	5,825	—	—	2	70	23	1,400
84th „	—	—	1	17	165	7,542	—	—	—	—	29	1,445
85th „	—	—	3	294	135	10,876	—	—	—	—	—	—
86th „	—	—	—	—	177	6,839	—	—	—	—	12	609
87th „	—	—	1	84	151	6,057	—	—	—	—	23	1,432
88th „	—	—	—	—	50	3,005	—	—	2	21	15	556
89th „	—	—	—	—	82	4,048	—	—	—	—	—	—
90th „	—	—	—	—	10	1,717	—	—	—	—	40	1,995
91st „	—	—	—	—	32	1,175	—	—	—	—	29	2,335
92nd „	1	Not kn.	—	—	67	3,722	—	—	—	—	—	—
93rd „	—	—	—	—	27	1,012	—	—	1	42	27	1,651
94th „	—	—	—	—	49	2,177	—	—	1	56	35	2,117
95th „	—	—	—	—	79	2,709	—	—	—	—	7	295
96th „	—	—	—	—	69	5,702	—	—	6	616	32	1,736
97th „	—	—	3	42	160	1,603	—	—	—	—	13	495
98th „	—	—	8	210	134	6,235	—	—	—	—	2	36
99th „	—	—	—	—	179	7,894	—	—	—	—	17	1,316
100th „	—	—	2	341	161	8,504	—	—	—	—	20	1,100
101st „	—	—	1	42	21	1,623	—	—	1	84	16	605
102nd „	—	—	—	—	47	3,106	—	—	—	—	16	1,288
103rd „	—	—	—	—	16	1,167	—	—	—	—	19	2,108
104th „	—	—	1	168	17	1,485	—	—	—	—	9	328
105th „	—	—	1	28	124	10,419	—	—	—	—	11	459
106th „	—	—	6	Not kn.	31	2,163	—	—	—	—	22	1,533
107th „	—	—	—	—	36	2,324	—	—	—	—	28	1,356
108th „	—	—	2	385	107	4,942	—	—	—	—	36	1,077
109th „	—	—	—	—	93	5,050	—	—	—	—	19	779
Rifle Brigade 1st Battalion	—	—	—	—	84	4,418	—	—	—	—	4	882
Rifle Brigade 2nd „	—	—	1	7	35	1,737	—	—	—	—	17	595
Rifle Brigade 3rd „	—	—	—	—	24	681	—	—	—	—	7	203
Rifle Brigade 4th „	—	—	—	—	90	6,459	—	—	—	—	5	504
TOTAL INFANTRY	4	14	361	19,341	12,191	659,689	—	—	52	3,891	1,978	125,567
1st West India Regiment	—	—	—	—	59	6,119	—	—	—	—	—	—
2nd „ „	—	—	1	84	65	4,949	—	—	—	—	—	—
3rd „ „	1	14	—	—	57	3,810	—	—	—	—	—	—
4th „ „	—	—	2	210	53	5,234	—	—	—	—	—	—
Ceylon Rifle Regiment	—	—	—	—	42	2,772	—	—	—	—	—	—
Cape Mounted Riflemen	—	—	22	1,064	188	10,977	—	—	—	—	—	—
Royal Malta Fencible Artillery	—	—	4	504	21	1,269	—	—	—	—	—	—
Royal Canadian Rifle Regiment	—	—	1	42	74	3,816	—	—	—	—	—	—
TOTAL COLONIAL CORPS	1	14	30	1,904	559	38,946	—	—	—	—	—	—

ABSTRACT.

During 1867.	Service Companies.						REMARKS.
	Solitary Confinement.		Solitary Confinement and Imprisonment with or without Hard Labour.		Imprisonment with or without Hard Labour.		
REGIMENTS.	Cases.	Days.	Cases.	Days.	Cases.	Days.	
HOUSEHOLD CAVALRY	—	—	2	70	18	1,584	N.B.—The difference between the number of "Cases" in this Return and the number of "Imprisonments" in the Return No. 3 is caused by non-commissioned officers who were sentenced to imprisonment as well as reduction to the ranks being shown under the latter heading in Return No. 3, and also by the receipt of several Regimental Returns since the former statement was prepared.
CAVALRY OF THE LINE	—	—	69	4,720	994	66,350	
ROYAL ARTILLERY	3	38	81	1,750	2,512	146,493	
ROYAL ENGINEERS	—	—	16	Not kn.	421	24,693	
MILITARY TRAIN	—	—	3	70	172	12,764	
FOOT GUARDS	—	—	13	1,625	374	24,535	
INFANTRY OF THE LINE	4	14	413	23,232	14,169	785,256	
COLONIAL CORPS	1	14	30	1,904	559	38,946	
GENERAL TOTAL	8	66	627	33,371	19,219	1,100,621	

W. PAULET,
Adjutant-General.

No. 14.

No. 4.

RETURN showing the Number of Men who (in addition to the Punishments specified in Return No. 1) were marked with the Letter D, marked with Letters B C, discharged with Ignominy, and placed under Stoppages during 1865.

Adjutant-General's Office, 4th July 1868.

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
1st Life Guards	—	—	—	—	1	—	—	—
2nd „	1	—	—	—	—	—	4	—
Royal Horse Guards	2	—	—	—	—	—	5	—
1st Dragoon Guards	—	—	—	1	—	1	18	3
2nd „ „	—	2	—	—	—	—	10	6
3rd „ „	—	1	—	—	—	—	3	1
4th „ „	4	—	1	—	1	—	22	—
5th „ „	—	5	—	—	—	—	18	—
6th „ „	10	—	1	—	1	—	29	—
7th „ „	—	1	—	1	—	1	—	1
1st Dragoons	5	—	—	—	—	—	12	—
2nd „	8	—	—	—	—	—	19	—
3rd Hussars	6	—	—	—	—	—	32	—
4th „	10	—	—	—	—	—	16	—
5th Lancers	—	2	—	—	—	—	9	3
6th Dragoons	4	1	—	—	—	—	16	1
7th Hussars	—	2	—	—	—	—	3	2
8th „	5	—	—	—	—	—	25	—
9th Lancers	10	—	—	—	—	—	25	—
10th Hussars	6	—	—	—	—	—	36	—
11th „	2	—	—	—	—	—	7	—
12th Lancers	8	—	—	—	—	—	25	—
13th Hussars	8	—	2	—	2	—	11	—
14th „	11	—	—	—	—	—	20	—
15th „	2	—	—	—	—	—	14	—
16th Lancers	4	4	—	—	—	—	14	1
17th „	4	—	—	—	—	—	9	—
18th Hussars	—	5	—	1	—	1	3	4
19th „	4	—	—	—	—	—	10	3
20th „	4	1	—	1	—	1	10	1
21st „	1	2	—	—	—	—	27	2
TOTAL CAVALRY	119	26	4	4	5	4	452	28
ROYAL ARTILLERY	224	—	—	—	21	—	38	—
ROYAL ENGINEERS	30	—	3	—	3	—	242	—
MILITARY TRAIN	63	—	—	—	—	—	168	—
Grenadier Guards, 1st Battalion	7	—	2	—	2	—	39	—
„ „ 2nd „	14	—	—	—	—	—	35	—
„ „ 3rd „	12	—	—	—	—	—	47	—
Coldstream Guards, 1st Battalion	10	—	—	—	—	—	24	—
„ „ 2nd „	7	—	—	—	—	—	23	—
Scots Fusilier Guards, 1st Battalion	12	—	—	—	—	—	39	—
„ „ 2nd „	6	—	1	—	1	—	26	—
TOTAL FOOT GUARDS	68	—	3	—	3	—	233	—
1st Foot, 1st Battalion	—	3	—	—	—	—	51	7
1st Foot, 2nd „	1	—	—	—	—	—	44	—
2nd „ 1st „	5	—	2	—	2	—	31	—
2nd „ 2nd „	2	5	1	—	—	—	100	9
3rd „ 1st „	15	—	1	—	1	—	133	1
3rd „ 2nd „	—	1	1	—	1	—	128	12
4th „ 1st „	5	4	—	—	—	—	76	10
4th „ 2nd „	—	3	—	—	—	—	62	5
5th „ 1st „	8	—	—	—	—	—	24	—
5th „ 2nd „	4	4	—	—	—	—	142	6
6th „ 1st „	6	1	—	—	—	—	90	—
6th „ 2nd „	2	8	2	—	3	—	113	7
7th „ 1st „	—	1	—	—	—	—	5	7
7th „ 2nd „	2	1	—	—	—	—	131	1
8th „ 1st „	13	—	—	—	—	—	60	—
8th „ 2nd „		1	—	—	—	—	80	3
9th „ 1st „	—	—	—	—	1	—	109	2
9th „ 2nd „	—	1	—	—	—	—	72	—

RETURN showing the Number of Men who were marked with the Letter D, &c.—*cont.*

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
10th Foot 1st Battalion	11	8	—	—	1	—	139	20
10th Foot 2nd „	4	—	—	—	—	—	51	13
11th „ 1st „	—	9	—	—	2	—	16	11
11th „ 2nd „	2	3	—	—	—	—	30	8
12th „ 1st „	21	3	—	—	—	—	134	14
12th „ 2nd „	—	4	1	—	1	—	32	6
13th „ 1st „	2	—	—	—	—	—	98	—
13th „ 2nd „	—	2	—	—	—	—	18	6
14th „ 1st „	14	—	1	—	1	—	72	—
14th „ 2nd „	32	1	—	—	—	—	103	—
15th „ 1st „	6	1	2	—	—	—	42	10
15th „ 2nd „	1	1	—	—	—	—	76	3
16th „ 1st „	12	4	—	—	2	—	72	7
16th „ 2nd „	15	2	—	—	—	—	140	4
17th „ 1st „	4	—	1	—	1	—	149	1
17th „ 2nd „	2	—	—	—	—	—	58	9
18th „ 1st „	—	—	—	—	1	—	92	—
18th „ 2nd „	14	3	—	—	—	—	74	7
19th „ 1st „	—	2	—	—	—	—	13	4
19th „ 2nd „	2	7	—	—	—	—	28	12
20th „ 1st „	—	3	2	—	2	—	8	7
20th „ 2nd „	4	2	1	—	1	—	98	11
21st „ 1st „	4	—	1	—	1	—	46	—
21st „ 2nd „	—	6	—	—	—	—	39	10
22nd „ 1st „	—	1	—	—	—	—	70	14
22nd „ 2nd „	—	1	1	1	1	1	31	5
23rd „ 1st „	1	—	—	—	—	—	22	9
23rd „ 2nd „	—	2	—	—	—	—	70	8
24th „ 1st „	7	—	—	—	—	—	47	—
24th „ 2nd „	—	5	2	—	2	—	17	7
25th „ 1st „	6	1	1	1	1	1	155	6
25th „ 2nd „	4	3	2	—	—	—	118	11
26th „	7	4	—	—	—	—	26	5
27th „	1	—	—	—	—	—	39	2
28th „	8	—	—	—	—	—	44	2
29th „	5	10	—	—	—	—	44	13
30th „	12	5	—	—	—	—	175	9
31st „	15	1	1	—	1	—	85	1
32nd „	5	8	—	—	—	1	108	6
33rd „	2	1	1	—	1	—	49	8
34th „	—	2	2	—	2	—	11	6
35th „	—	1	—	—	—	—	4	4
36th „	2	5	—	—	—	—	49	11
37th „	6	—	1	—	1	—	47	—
38th „	—	1	—	—	—	—	3	13
39th „	5	—	—	—	—	—	111	—
40th „	23	5	—	—	—	—	87	14
41st „	7	17	2	—	2	1	53	15
42nd „	1	10	—	—	—	—	8	11
43rd „	1	6	—	—	—	—	35	26
44th „	1	1	—	—	—	—	21	11
45th „	—	5	—	—	—	—	39	7
46th „	1	1	—	—	—	—	33	3
47th „	5	3	—	—	—	—	108	6
48th „	1	—	1	—	1	—	63	1
49th „	10	1	2	—	—	—	31	4
50th „	4	2	—	—	—	—	66	4
51st „	1	3	—	1	—	—	13	17
52nd „	—	—	—	—	—	—	46	—
53rd „	9	—	—	—	—	—	51	—
54th „	—	3	—	—	—	—	29	15
55th „	1	6	—	—	—	—	41	10
56th „	—	2	—	—	—	—	19	4
57th „	6	1	—	—	—	—	57	4
58th „	—	9	—	—	—	—	19	26
59th „	14	1	—	—	—	—	66	2
60th „ 1st Battalion	9	—	—	—	—	—	40	—
60th „ 2nd „	12	—	1	—	1	—	75	—
60th „ 3rd „	4	6	—	—	—	—	37	17
60th „ 4th „	3	4	2	—	2	—	57	9
61st „	6	—	—	—	—	—	71	—
62nd „	9	2	1	—	2	—	55	2
63rd „	6	3	—	—	—	—	138	6
64th „	9	—	—	—	—	—	92	—
65th „	3	1	3	—	3	—	56	11
66th „	1	—	—	—	—	—	49	—
67th „	3	2	—	—	1	—	142	11
68th „	10	—	—	—	—	—	206	5
69th „	8	—	—	—	—	—	55	—
70th „	10	2	2	—	2	—	67	9
71st „	11	5	—	—	—	—	31	7
72nd „	—	7	—	—	—	—	—	12
73rd „	10	—	—	—	1	—	60	—
74th „	31	1	—	—	—	—	78	1

RETURN showing the Number of Men who were marked with the Letter D, &c.—*cont.*

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
75th Foot	7	—	2	—	2	—	64	—
76th „	—	3	—	—	—	—	43	8
77th „	2	1	2	—	2	—	18	5
78th „	9	9	—	1	—	1	45	4
79th „	—	4	—	—	—	—	6	4
80th „	—	2	—	—	—	—	20	11
81st „	3	3	1	—	1	—	28	6
82nd „	1	—	1	—	1	—	26	4
83rd „	11	—	1	—	3	—	49	—
84th „	3	6	1	—	—	—	85	10
85th „	12	—	—	—	—	—	82	—
86th „	—	3	—	—	—	—	52	6
87th „	4	—	—	—	—	—	35	—
88th „	1	1	—	—	—	—	32	6
89th „	3	—	1	—	1	—	49	2
90th „	—	4	—	—	—	—	9	17
91st „	—	—	—	—	—	—	30	10
92nd „	35	—	1	—	1	—	74	1
93rd „	—	8	—	—	—	—	10	18
94th „	—	1	—	—	—	—	29	9
95th „	—	—	—	—	1	—	49	—
96th „	6	4	—	—	—	—	80	14
97th „	—	—	—	—	—	—	79	7
98th „	—	3	—	—	—	—	17	8
99th „	3	1	—	—	—	—	92	9
100th „	6	5	—	—	—	—	107	18
101st „	—	—	—	—	—	—	—	8
102nd „	2	6	1	—	1	—	40	12
103rd „	3	3	1	—	1	—	18	3
104th „	3	2	—	—	—	—	8	2
105th „	3	2	—	—	—	—	51	7
106th „	—	5	—	—	—	—	15	17
107th „	5	—	—	—	—	—	26	3
108th „	—	5	—	—	1	—	53	9
109th „	1	2	—	—	—	—	24	3
Rifle Brigade 1st Battalion	1	4	—	—	—	—	72	13
Rifle Brigade 2nd „	1	—	—	—	—	—	23	2
Rifle Brigade 3rd „	1	3	—	—	—	—	13	4
Rifle Brigade 4th „	9	—	—	—	—	—	119	5
TOTAL INFANTRY	664	344	53	4	60	5	8,270	908
1st West India Regiment	9	—	—	—	1	—	22	—
2nd „ „	1	—	—	—	—	—	9	—
3rd „ „	—	—	—	—	—	—	12	—
4th „ „	5	—	—	—	—	—	15	—
Ceylon Rifle Brigade	3	—	1	—	1	—	20	—
Cape Mounted Riflemen	5	—	1	—	2	—	43	—
Royal Malta Fencible Artillery	—	—	1	—	1	—	5	—
Royal Canadian Rifle Regiment	1	—	—	—	—	—	107	—
African Artillerymen, Jamaica	—	—	—	—	—	—	—	—
Gun Lascars, Hong Kong	—	—	—	—	—	—	—	—
TOTAL COLONIAL CORPS	24	—	3	—	5	—	233	—
GENERAL TOTAL	1,192	370	66	8	97	9	9,636	936
	1,562		74		106		10,572	

W. PAULET,
Adjutant-General.

No. 5.

RETURN showing the Number of Men who (in addition to the Punishments specified in Return No. 2) were marked with the Letter D, marked with Letters B C, discharged with Ignominy, and placed under Stoppages during 1866.

Adjutant-General's Office, 4th July 1868.

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
1st Life Guards	—	—	—	—	—	—	—	—
2nd "	2	—	—	—	—	—	2	—
Royal Horse Guards	—	—	—	—	—	—	3	—
1st Dragoon Guards	4	4	—	—	—	—	42	5
2nd " "	—	4	—	—	—	—	12	4
3rd " "	—	—	—	—	—	—	—	1
4th " "	5	—	1	—	1	—	28	—
5th " "	6	—	—	—	—	—	43	—
6th " "	7	—	—	—	—	—	18	—
7th "	—	—	—	—	—	—	7	3
1st Dragoons	6	—	—	—	—	—	8	—
2nd "	4	—	—	—	—	—	23	—
3rd Hussars	3	—	—	—	—	—	16	—
4th "	14	—	—	—	—	—	21	—
5th Lancers	—	—	—	—	—	—	3	2
6th Dragoons	—	—	—	—	—	—	25	—
7th Hussars	—	2	—	—	—	—	4	1
8th "	5	—	—	—	—	—	23	—
9th Lancers	9	—	—	—	—	—	32	—
10th Hussars	8	—	1	—	1	—	27	—
11th "	5	4	—	—	—	—	10	4
12th Lancers	10	—	—	—	—	—	18	—
13th Hussars	8	1	—	—	—	—	7	—
14th "	21	—	—	—	—	—	38	—
15th "	5	—	—	—	—	—	17	—
16th Lancers	—	6	—	—	—	—	23	8
17th "	3	—	—	—	—	—	10	—
18th Hussars	—	1	—	—	—	—	8	1
19th "	2	—	—	—	—	—	11	5
20th "	1	—	—	—	—	—	—	—
21st "	—	5	1	—	1	—	13	4
TOTAL CAVALRY	128	27	3	—	3	—	492	38
ROYAL ARTILLERY	209	—	17	—	27	—	20	—
ROYAL ENGINEERS	25	—	1	—	1	—	279	—
MILITARY TRAIN	45	—	1	—	—	—	145	—
Grenadier Guards, 1st Battalion	8	—	—	—	—	—	39	—
" " 2nd "	11	—	1	—	1	—	37	—
" " 3rd "	17	—	1	—	2	—	74	—
Coldstream Guards, 1st Battalion	3	—	—	—	—	—	20	—
" " 2nd "	5	—	—	—	—	—	34	—
Scots Fusilier Guards, 1st Battalion	9	—	1	—	1	—	34	—
" " 2nd "	1	—	—	—	—	—	30	—
TOTAL FOOT GUARDS	54	—	3	—	4	—	268	—
1st Foot, 1st Battalion	1	3	—	—	—	—	126	9
1st Foot, 2nd "	2	5	—	—	—	—	22	7
2nd " 1st "	4	4	—	—	—	—	20	4
2nd " 2nd "	6	5	3	—	1	—	126	3
3rd " 1st "	9	8	—	—	—	—	66	17
3rd " 2nd "	5	—	—	—	—	—	174	6
4th " 1st "	6	5	3	—	3	—	105	40
4th " 2nd "	—	1	—	—	—	—	105	1
5th " 1st "	1	4	—	—	—	—	23	6
5th " 2nd "	15	3	—	—	—	—	219	9
6th " 1st "	5	—	—	—	—	—	103	—
6th " 2nd "	2	4	—	—	—	—	135	4
7th " 1st "	—	6	—	—	—	—	11	13
7th " 2nd "	2	2	1	—	1	—	177	1
8th " 1st "	3	5	—	—	—	—	84	3
8th " 2nd "	—	1	—	—	—	—	101	5
9th " 1st "	6	—	1	1	1	1	120	5
9th " 2nd "	1	3	—	—	—	—	174	7

RETURN showing the Number of Men who were marked with the Letter D, &c.—*cont.*

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
10th Foot 1st Battalion	13	4	—	1	—	1	138	11
10th Foot 2nd „	2	4	—	—	—	—	131	7
11th „ 1st „	—	5	1	1	1	—	81	7
11th „ 2nd „	5	4	—	—	—	—	74	20
12th „ 1st „	16	2	3	—	—	—	117	14
12th „ 2nd „	—	2	1	—	1	—	74	7
13th „ 1st „	5	—	1	—	1	—	64	—
13th „ 2nd „	—	1	1	1	1	1	33	17
14th „ 1st „	6	—	4	—	4	—	57	—
14th „ 2nd „	21	2	1	—	1	—	238	6
15th „ 1st „	1	1	—	—	—	—	105	6
15th „ 2nd „	—	2	1	—	1	—	98	12
16th „ 1st „	4	3	—	—	—	—	199	7
16th „ 2nd „	2	2	2	—	2	—	111	7
17th „ 1st „	7	—	—	—	—	—	83	—
17th „ 2nd „	6	2	—	—	—	—	115	5
18th „ 1st „	2	2	—	1	—	1	150	6
18th „ 2nd „	18	1	—	—	—	—	60	2
19th „ 1st „	—	1	—	—	—	—	18	7
19th „ 2nd „	—	5	—	—	—	—	34	12
20th „ 1st „	1	1	—	—	—	—	47	5
20th „ 2nd „	1	3	—	—	—	—	118	12
21st „ 1st „	13	—	1	—	1	—	81	—
21st „ 2nd „	1	4	—	2	—	2	58	18
22nd „ 1st „	9	3	—	—	—	—	78	21
22nd „ 2nd „	1	3	—	—	—	—	86	10
23rd „ 1st „	—	1	—	—	—	—	35	18
23rd „ 2nd „	—	3	1	—	1	—	146	4
24th „ 1st „	5	1	—	—	—	—	48	1
24th „ 2nd „	—	2	—	—	—	—	27	9
25th „ 1st „	2	5	3	—	3	—	148	9
25th „ 2nd „	9	8	1	—	1	—	170	10
26th „	1	5	2	—	3	—	20	25
27th „	—	—	—	—	—	—	38	2
28th „	8	—	—	—	—	—	79	—
29th „	2	10	—	—	—	—	—	13
30th „	5	5	—	—	—	—	185	6
31st „	4	—	—	—	—	—	69	—
32nd „	—	7	—	1	—	2	78	9
33rd „	—	1	—	—	—	—	45	8
34th „	—	2	—	—	—	—	24	4
35th „	—	4	—	—	—	—	7	12
36th „	1	2	—	1	—	1	39	5
37th „	1	1	—	—	—	—	25	5
38th „	—	3	1	—	1	—	7	8
39th „	11	18	1	1	1	1	93	63
40th „	2	—	1	—	1	—	8	—
41st „	—	12	—	—	—	—	25	18
42nd „	—	11	—	—	—	—	28	17
43rd „	11	3	2	1	2	—	82	15
44th „	13	—	—	—	—	—	150	2
45th „	2	6	—	—	—	—	50	12
46th „	—	1	—	—	—	—	52	6
47th „	1	4	—	—	—	—	154	9
48th „	11	—	—	—	—	—	40	—
49th „	—	4	—	—	—	—	31	5
50th „	5	6	—	—	—	—	120	11
51st „	—	1	—	1	1	1	7	10
52nd „	13	—	3	—	3	—	94	—
53rd „	7	—	—	6	—	—	60	2
54th „	—	1	—	—	—	—	72	7
55th „	—	3	—	1	—	1	38	12
56th „	8	—	—	—	—	—	59	2
57th „	4	1	1	—	—	—	179	1
58th „	1	4	1	—	—	—	23	18
59th „	12	—	—	—	—	—	49	—
60th „ 1st Battalion	—	5	—	—	—	—	40	5
60th „ 2nd „	9	—	1	—	1	—	45	—
60th „ 3rd „	—	7	—	—	—	—	73	22
60th „ 4th „	—	4	—	—	—	—	85	7
61st „	6	3	—	—	3	—	91	3
62nd „	5	—	2	—	3	—	37	—
63rd „	9	—	1	—	1	—	104	—
64th „	8	—	—	—	—	—	59	1
65th „	5	—	1	—	1	—	75	—
66th „	3	—	2	—	2	—	81	—
67th „	3	1	2	—	2	—	120	5
68th „	8	1	—	—	—	—	87	1
69th „	7	9	—	—	—	—	106	45
70th „	1	—	—	—	—	—	—	—
71st „	13	—	—	—	—	—	119	—
72nd „	20	7	—	—	—	—	76	8
73rd „	10	1	—	—	—	—	45	—
74th „	14	—	2	—	2	—	47	—

RETURN showing the Number of Men who were marked with the Letter D, &c.—*cont.*

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
75th Foot	12	—	—	—	—	—	90	—
76th „	—	1	—	—	—	—	50	11
77th „	—	3	—	—	—	—	24	12
78th „	—	5	—	—	—	—	121	5
79th „	—	5	—	—	—	—	11	8
80th „	2	—	1	—	1	—	68	3
81st „	8	—	—	—	—	—	36	—
82nd „	1	1	—	—	—	—	59	3
83rd „	10	—	1	—	2	—	40	—
84th „	—	3	—	—	—	—	98	6
85th „	7	—	1	—	1	—	120	—
86th „	—	1	1	—	1	—	89	8
87th „	10	5	—	1	—	—	77	4
88th „	—	6	3	—	3	—	59	12
89th „	7	—	2	—	2	—	65	—
90th „	—	3	—	—	—	—	4	18
91st „	—	7	—	—	—	—	48	14
92nd „	6	—	1	—	1	—	46	—
93rd „	—	6	—	—	—	—	17	19
94th „	1	—	1	—	1	—	43	8
95th „	—	—	1	—	1	—	93	1
96th „	2	5	—	—	—	—	61	26
97th „	—	2	—	—	—	—	36	15
98th „	—	2	—	—	—	—	31	14
99th „	1	4	—	—	—	—	144	9
100th „	1	7	—	—	—	—	121	18
101st „	—	1	—	—	—	—	6	10
102nd „	2	1	1	—	1	—	40	6
103rd „	1	—	—	—	—	—	16	—
104th „	—	1	1	—	1	—	33	3
105th „	1	5	4	—	4	—	116	9
106th „	1	1	—	—	—	—	28	6
107th „	3	1	—	—	—	—	22	5
108th „	2	—	—	—	—	—	98	5
109th „	—	9	—	—	—	—	29	14
Rifle Brigade 1st Battalion	5	2	1	—	1	—	80	7
Rifle Brigade 2nd „	—	—	—	—	—	—	33	1
Rifle Brigade 3rd „	—	3	—	—	—	—	4	7
Rifle Brigade 4th „	2	3	1	—	1	—	147	8
TOTAL INFANTRY	547	382	72	20	72	12	10,516	1,109
1st West India Regiment	12	—	—	—	—	—	25	—
2nd „ „	6	—	1	—	1	—	3	—
3rd „ „	5	—	—	—	—	—	14	—
4th „ „	1	—	—	—	—	—	1	—
Ceylon Rifle Regiment	8	—	2	—	2	—	26	3
Cape Mounted Riflemen	12	—	—	—	—	—	84	—
Royal Malta Fencible Artillery	—	—	—	—	—	—	14	—
Royal Canadian Rifle Regiment	3	—	—	—	—	—	97	—
African Artillerymen, Jamaica	—	—	—	—	—	—	—	—
Gun Lascars, Hong Kong	—	—	—	—	—	—	—	—
TOTAL COLONIAL CORPS	47	—	3	—	3	—	264	3
GENERAL TOTAL	1,055	409	100	20	110	12	11,984	1,150
	1,464		120		122		13,134	

W. PAULET,
Adjutant-General.

No. 6.

RETURN showing the Number of Men who (in addition to the Punishments specified in Return No. 3) were marked with the Letter D, marked with Letters B C, discharged with Ignominy, and placed under Stoppages during 1867.

Adjutant-General's Office, 4th July 1868.

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
1st Life Guards	—	—	—	—	—	—	—	—
2nd "	2	—	—	—	—	—	3	—
Royal Horse Guards	5	—	—	—	1	—	4	—
1st Dragoon Guards	3	—	2	—	2	—	31	—
2nd " "	—	1	—	—	—	—	5	2
3rd " "	—	3	—	1	—	1	—	6
4th " "	5	—	—	—	—	—	46	—
5th " "	4	—	2	—	2	—	21	—
6th " "	5	—	—	—	—	—	15	—
7th " "	1	3	—	—	—	—	27	4
1st Dragoons	6	—	—	—	—	—	5	—
2nd "	14	—	1	—	—	—	25	—
3rd Hussars	16	—	—	—	—	—	—	—
4th "	20	7	—	1	—	1	32	5
5th Lancers	1	1	—	1	—	1	4	2
6th Dragoons	—	—	—	—	—	—	29	3
7th Hussars	—	3	—	—	—	—	—	3
8th "	15	—	2	—	1	—	35	—
9th Lancers	8	—	—	—	—	—	39	—
10th Hussars	4	—	2	—	2	—	18	—
11th "	—	6	—	—	—	—	—	5
12th Lancers	5	—	—	—	—	—	17	—
13th Hussars	1	10	—	3	—	3	8	11
14th "	11	—	—	—	—	—	21	—
15th "	3	—	—	—	—	—	16	—
16th Lancers	—	2	—	1	—	1	17	2
17th "	10	—	1	—	1	—	33	—
18th Hussars	—	6	—	—	—	—	21	6
19th "	—	4	1	—	1	—	21	8
20th "	—	1	—	—	—	—	8	6
21st "	—	3	1	—	1	—	11	2
TOTAL CAVALRY	139	50	12	7	11	7	512	65
ROYAL ARTILLERY	282	—	27	—	27	—	1,708	—
ROYAL ENGINEERS	23	—	3	—	3	—	301	—
MILITARY TRAIN	30	—	4	—	5	—	114	—
Grenadier Guards, 1st Battalion	10	—	2	—	2	—	36	—
" " 2nd "	7	—	1	—	1	—	28	—
" " 3rd "	9	—	—	—	—	—	45	—
Coldstream Guards, 1st Battalion	7	—	2	—	2	—	32	—
" " 2nd "	9	—	6	—	6	—	25	—
Scots Fusilier Guards, 1st Battalion	10	—	1	—	—	—	52	—
" " 2nd "	1	—	—	—	—	—	29	—
TOTAL FOOT GUARDS	53	—	12	—	11	—	247	—
1st Foot, 1st Battalion	—	8	—	—	—	—	62	42
1st Foot, 2nd "	—	9	—	—	—	—	14	35
2nd " 1st "	—	9	—	—	—	—	12	19
2nd " 2nd "	2	—	2	—	2	—	36	—
3rd " 1st "	—	5	—	—	—	—	32	39
3rd " 2nd "	7	—	—	—	—	—	48	—
4th " 1st "	—	5	—	—	—	—	—	10
4th " 2nd "	—	1	—	—	—	—	125	4
5th " 1st "	—	5	—	1	—	1	—	11
5th " 2nd "	5	1	1	—	1	—	211	1
6th " 1st "	—	—	—	—	—	—	—	1
6th " 2nd "	6	1	—	—	—	—	83	4
7th " 1st "	—	5	—	—	—	—	12	21
7th " 2nd "	5	1	2	—	2	—	118	2
8th " 1st "	—	7	1	2	1	2	110	9
8th " 2nd "	—	—	—	—	—	—	130	1
9th " 1st "	12	—	1	—	—	—	207	—
9th " 2nd "	—	2	—	—	—	—	—	2

RETURN showing the Number of Men who were marked with the Letter D, &c.—*cont.*

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
10th Foot 1st Battalion	9	3	3	—	3	—	187	5
10th Foot 2nd „	4	1	—	—	—	—	120	8
11th „ 1st „	—	2	—	—	—	1	38	14
11th „ 2nd „	4	1	1	1	1	1	145	19
12th „ 1st „	14	—	—	—	—	—	60	2
12th „ 2nd „	1	4	1	—	1	—	78	22
13th „ 1st „	4	3	—	—	—	—	75	5
13th „ 2nd „	5	2	—	—	—	—	45	2
14th „ 1st „	4	1	2	2	2	2	103	5
14th „ 2nd „	19	—	3	—	3	—	406	—
15th „ 1st „	—	8	1	—	1	—	137	12
15th „ 2nd „	—	—	2	—	2	—	125	—
16th „ 1st „	8	4	—	1	—	1	85	17
16th „ 2nd „	1	1	1	—	1	—	103	14
17th „ 1st „	4	—	2	—	2	—	86	—
17th „ 2nd „	—	2	1	—	1	—	61	9
18th „ 1st „	13	—	3	—	3	—	145	—
18th „ 2nd „	10	2	1	—	1	—	98	4
19th „ 1st „	—	4	1	—	1	—	10	11
19th „ 2nd „	—	6	—	—	—	—	33	16
20th „ 1st „	1	—	—	—	—	—	56	3
20th „ 2nd „	—	—	—	—	—	—	108	5
21st „ 1st „	12	—	—	—	—	—	56	—
21st „ 2nd „	3	5	—	1	—	1	80	24
22nd „ 1st „	—	5	1	—	1	—	—	11
22nd „ 2nd „	—	—	1	—	1	—	56	3
23rd „ 1st „	—	3	—	—	—	—	14	17
23rd „ 2nd „	3	1	—	—	—	—	161	1
24th „ 1st „	—	14	—	—	—	—	67	31
24th „ 2nd „	1	13	1	1	1	1	23	21
25th „ 1st „	6	7	—	—	—	—	73	9
25th „ 2nd „	—	11	—	—	—	—	—	16
26th „	—	13	—	1	—	1	45	39
27th „	—	—	—	—	—	—	74	14
28th „	6	—	3	—	3	—	26	—
29th „	—	12	—	—	—	—	1	17
30th „	3	5	2	1	2	1	118	6
31st „	8	5	2	—	2	—	78	9
32nd „	—	5	1	—	1	—	47	10
33rd „	1	7	—	—	—	—	49	15
34th „	3	3	—	—	—	—	24	7
35th „	—	6	—	—	—	—	5	16
36th „	—	2	—	1	—	1	14	7
37th „	—	6	1	—	1	—	40	28
38th „	—	3	—	—	—	—	8	16
39th „	18	—	4	—	4	—	60	—
40th „	9	—	3	—	3	—	70	—
41st „	1	4	1	—	1	—	20	18
42nd „	—	9	—	—	—	—	11	25
43rd „	8	—	—	—	—	—	45	—
44th „	4	—	—	—	—	—	99	—
45th „	—	4	—	1	—	1	11	—
46th „	1	—	—	—	—	—	36	5
47th „	9	2	—	1	—	1	157	12
48th „	7	—	—	—	—	—	44	—
49th „	—	5	1	1	—	1	40	8
50th „	13	6	—	1	—	1	131	14
51st „	8	1	—	—	—	—	144	4
52nd „	11	—	3	—	3	—	69	—
53rd „	5	4	2	—	2	—	98	5
54th „	14	—	1	—	1	—	69	—
55th „	—	13	—	2	—	2	64	24
56th „	10	—	—	—	—	—	77	—
57th „	15	—	1	—	1	—	69	5
58th „	—	2	2	—	—	—	27	15
59th „	3	5	1	1	1	—	60	15
60th „ 1st Battalion	—	11	—	—	—	—	57	13
60th „ 2nd „	9	3	—	—	3	—	44	3
60th „ 3rd „	2	4	—	—	—	—	82	11
60th „ 4th „	1	4	—	—	—	—	60	6
61st „	1	5	2	—	—	—	107	5
62nd „	2	—	—	—	—	—	64	—
63rd „	18	—	—	—	—	—	96	—
64th „	—	11	—	—	—	—	55	15
65th „	15	—	—	—	—	—	80	—
66th „	7	—	2	—	2	—	119	—
67th „	5	—	1	—	1	—	31	—
68th „	8	—	2	—	2	—	63	—
69th „	10	1	—	—	—	—	46	6
70th „	13	—	1	—	1	—	28	—
71st „	15	—	—	—	—	—	62	—
72nd „	28	—	1	—	1	—	107	—
73rd „	—	3	—	—	—	—	64	4
74th „	17	—	3	—	3	—	59	—

RETURN showing the Number of Men who were marked with the Letter D, &c.—*cont.*

REGIMENTS.	Number marked with Letter D.		Number marked with Letters B C.		Number discharged with Ignominy.		Number placed under Stoppages with or without other Punishment.	
	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.	Service Troops.	Depôt.
75th Foot	4	8	1	1	1	1	136	5
76th „	—	—	—	—	—	—	102	4
77th „	—	—	—	—	—	—	13	8
78th „	1	11	—	—	—	—	111	8
79th „	—	7	—	2	—	2	14	6
80th „	2	—	—	—	—	—	75	—
81st „	5	—	1	—	1	—	27	—
82nd „	2	1	—	1	—	1	20	4
83rd „	9	7	2	—	2	—	51	11
84th „	5	2	1	—	1	—	155	18
85th „	15	—	4	—	4	—	110	-
86th „	1	—	—	—	—	—	9	—
87th „	1	4	—	—	—	—	156	19
88th „	—	1	—	—	—	—	41	11
89th „	6	—	—	—	—	—	76	—
90th „	—	6	—	—	—	—	2	23
91st „	—	19	—	—	—	—	27	24
92nd „	9	—	1	—	1	—	42	—
93rd „	—	13	—	—	—	—	19	21
94th „	1	7	—	1	—	1	43	27
95th „	1	3	—	—	—	—	101	6
96th „	2	3	—	—	—	—	53	24
97th „	2	—	—	—	—	—	88	9
98th „	4	—	—	—	—	—	97	2
99th „	1	3	1	—	1	—	160	12
100th „	10	—	—	1	—	1	176	16
101st „	—	2	—	—	—	—	—	11
102nd „	2	4	—	2	—	—	47	15
103rd „	2	4	—	1	1	1	11	21
104th „	1	2	2	—	2	—	25	7
105th „	3	4	2	—	1	—	110	9
106th „	—	4	—	1	—	1	34	10
107th „	1	2	1	—	1	—	21	21
108th „	—	—	—	—	—	—	—	17
109th „	—	2	—	—	—	—	—	13
Rifle Brigade 1st Battalion	—	1	—	—	—	—	67	2
Rifle Brigade 2nd „	1	—	—	—	—	—	31	15
Rifle Brigade 3rd „	—	1	—	—	—	—	23	5
Rifle Brigade 4th „	2	—	4	—	4	—	79	—
TOTAL INFANTRY	564	442	92	29	89	27	9,540	1,318
1st West India Regiment	6	—	—	—	—	—	14	—
2nd „ „	—	—	—	—	—	—	11	—
3rd „ „	6	—	—	—	—	—	14	—
4th „ „	5	—	1	—	1	—	7	—
Ceylon Rifle Regiment	3	—	—	—	—	—	17	12
Cape Mounted Riflemen	12	—	2	—	2	—	118	—
Royal Malta Fencible Artillery	—	—	—	—	—	—	13	—
Royal Canadian Rifle Regiment	—	—	1	—	1	—	75	—
African Artillerymen, Jamaica	—	—	—	—	—	—	—	—
Gun Lascars, Hong Kong	—	—	—	—	—	—	—	—
TOTAL COLONIAL CORPS	32	—	4	—	4	—	269	—
GENERAL TOTAL	1,123	492	154	36	150	34	12,691	1,383
	1,615		190		184		14,074	

W. PAULET,
Adjutant-General.

No. 15.

No. 7.

RETURN showing the Number of Men flogged during the year 1865, specifying the Crimes for which the Punishment was inflicted.

Adjutant-General's Office, Horse Guards, S.W.,
4th July 1868.

REGIMENTS.	Number of Men Flogged.	CRIMES.										
		Mutiny.	Desertion.	Violence to Superiors and Insubordination.	Disobedience.	Quitting or Sleeping on Post.	Drunk on Duty under Arms.	Habitual Drunkenness.	Disgraceful Conduct.	Absence without Leave.	Making away with Necessaries.	Miscellaneous.
1st Dragoon Guards	1	—	—	1	—	—	—	—	—	—	—	—
3rd „ „	1	—	—	1	—	—	—	—	—	—	—	—
4th „ „	2	—	1	1	—	—	—	—	—	—	—	—
6th „ „	1	—	—	—	—	—	—	—	1	—	—	—
1st Dragoons	1	—	—	1	—	—	—	—	—	—	—	—
7th Hussars	2	—	2	—	—	—	—	—	—	—	—	—
9th Lancers	2	—	—	1	—	—	—	—	—	—	—	1
10th Hussars	1	—	1	—	—	—	—	—	—	—	—	—
11th „	2	—	—	2	—	—	—	—	—	—	—	—
12th Lancers	2	—	—	1	—	—	—	—	1	—	—	—
18th Hussars	3	—	1	—	—	—	—	—	2	—	—	—
19th „	1	—	—	1	—	—	—	—	—	—	—	—
20th „	3	—	1	1	1	—	—	—	—	—	—	—
Royal Artillery	70	—	10	25	2	—	1	3	14	—	2	2
Royal Engineers	6	—	1	2	—	—	—	—	1	11	1	1
Military Train	10	—	6	4	—	—	—	—	—	—	—	—
Coldstream Guards, 1st Battalion	2	—	1	1	—	—	—	—	—	—	—	—
„ „ 2nd „	2	—	—	2	—	—	—	—	—	—	—	—
Scots Fusilier Guards, 1st Battalion	1	—	—	—	2	—	—	—	—	—	—	—
„ „ 2nd „	2	—	—	1	—	—	—	—	—	—	—	—
1st Foot 1st Battalion	1	—	1	—	—	—	—	—	—	—	—	—
2nd „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
2nd „	2	—	—	2	—	—	—	—	—	—	—	—
3rd „ 1st „	5	—	1	4	—	—	—	—	—	—	—	—
2nd „	1	—	—	—	—	—	—	—	—	—	—	1
4th „ 1st „	3	—	—	—	—	—	—	2	—	—	—	1
2nd „	1	—	—	1	—	—	—	—	—	—	—	—
5th „ 2nd „	3	—	—	2	—	—	—	—	1	—	—	—
6th „ 2nd „	3	—	—	—	—	—	—	—	2	—	1	—
7th „ 2nd „	6	—	1	—	—	—	—	—	—	—	5	—
8th „ 1st „	2	—	1	1	—	—	—	—	—	—	—	—
2nd „	1	—	—	—	—	—	—	—	—	—	—	1
9th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
2nd „	2	—	—	1	—	—	—	—	1	—	—	—
10th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
2nd „	1	—	—	—	—	—	—	—	—	—	1	—
11th „ 1st „	6	—	1	1	1	—	—	—	2	—	—	1
2nd „	3	—	—	1	—	—	—	—	1	—	—	1
12th „ 1st „	34	—	—	4	—	—	5	6	17	2	—	—
2nd „	4	—	—	4	—	—	—	—	—	—	—	—
13th „ 2nd „	1	—	—	1	—	—	—	—	—	—	—	—
14th „ 1st „	5	—	3	1	—	—	—	—	1	—	—	—
2nd „	11	—	2	7	—	1	—	—	—	—	—	1
15th „ 1st „	1	—	1	—	—	—	—	—	—	—	—	—
2nd „	1	—	—	—	—	—	—	—	1	—	—	—
16th „ 1st „	3	—	—	1	—	—	—	—	2	—	—	—
2nd „	6	—	5	—	—	—	—	1	—	—	—	—
17th „ 1st „	4	—	—	1	—	—	—	—	3	—	—	—
2nd „	1	—	—	—	—	—	—	—	1	—	—	—
18th „ 1st „	8	—	—	3	2	—	—	—	1	—	1	1
2nd „	41	—	6	6	2	2	3	4	8	—	—	10
19th „ 1st „	1	—	—	—	—	—	—	—	—	—	—	1
20th „ 2nd „	2	—	2	—	—	—	—	—	—	—	—	—
21st „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
22nd „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
2nd „	3	—	—	—	—	—	—	—	2	—	1	—
23rd „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
2nd „	1	—	—	1	—	—	—	—	—	—	—	—
24th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
2nd „	1	—	—	1	—	—	—	—	—	—	—	—
25th „ 1st „	5	—	3	2	—	—	—	—	—	—	—	—
2nd „	4	—	—	2	—	—	—	—	—	—	2	—
26th „	3	—	3	—	—	—	—	—	—	—	—	—
27th „	1	—	—	1	—	—	—	—	—	—	—	—
28th „	2	—	—	—	1	—	1	—	—	—	—	—
29th „	2	—	1	—	1	—	—	—	—	—	—	—
30th „	4	—	3	—	—	—	—	—	1	—	—	—
31st „	3	—	2	1	—	—	—	—	—	—	—	—
32nd „	3	—	—	—	—	—	—	—	—	—	3	—
33rd „	5	—	2	3	—	—	—	—	—	—	—	—
34th „	1	—	—	—	—	—	—	—	—	—	—	1
36th „	1	—	—	—	1	—	—	—	—	—	—	—
38th „	1	—	—	1	—	—	—	—	—	—	—	—
40th „	15	—	3	3	—	—	—	—	7	—	1	1

RETURN showing the Number of Men flogged during the year 1865—*cont.*

REGIMENTS.	Number of Men Flogged.	CRIMES.										
		Mutiny.	Desertion.	Violence to Superiors and Insubordination.	Disobedience.	Quitting or Sleeping on Post.	Drunkenness on Duty Under Arms.	Habitual Drunkenness.	Disgraceful Conduct.	Absence without Leave.	Making away with Necessaries.	Miscellaneous.
41st Foot	4	—	2	—	1	—	—	—	—	—	1	—
43rd „	10	—	1	1	—	—	1	6	1	—	—	—
45th „	3	—	1	1	—	—	—	—	—	*1	—	—
46th „	—	—	—	—	—	—	—	—	—	—	—	—
47th „	1	—	—	1	—	—	—	—	—	—	—	—
48th „	1	—	—	—	—	—	—	1	—	—	—	—
49th „	1	—	—	1	—	—	—	—	—	—	—	—
50th „	29	—	4	1	2	—	9	5	2	1	—	5
51st „	2	—	1	—	—	—	—	—	—	1	—	—
52nd „	1	—	—	1	—	—	—	—	—	—	—	—
53rd „	6	—	2	4	—	—	—	—	—	—	—	—
54th „	1	—	—	1	—	—	—	—	—	—	—	—
55th „	1	—	—	1	—	—	—	—	—	—	—	—
56th „	8	—	—	—	1	—	—	—	3	4	—	—
57th „	24	—	—	—	2	1	8	5	5	1	—	2
58th „	3	—	—	—	1	—	—	—	—	—	2	—
59th „	4	—	3	1	—	—	—	—	—	—	—	—
60th „ 1st Battalion	2	—	—	1	—	—	—	—	—	*1	—	—
60th „ 2nd „	1	—	—	1	—	—	—	—	—	—	—	—
60th „ 3rd „	3	—	2	—	1	—	—	—	—	—	—	—
60th „ 4th „	1	—	—	—	—	—	—	—	1	—	—	—
61st „	6	—	—	2	1	—	—	—	—	*3	—	—
63rd „	2	—	—	—	—	—	—	1	1	—	—	—
64th „	1	—	—	—	—	—	—	—	—	—	1	—
65th „	15	—	1	3	—	1	2	3	5	—	—	—
66th „	4	—	—	1	1	—	—	—	1	—	1	—
67th „	3	—	—	1	—	1	1	—	—	—	—	—
68th „	21	—	1	5	—	—	1	9	4	—	—	1
69th „	1	—	—	—	—	—	—	—	1	—	—	—
70th „	15	—	—	5	—	—	8	—	—	—	1	1
72nd „	3	—	—	—	—	—	—	—	2	—	1	—
74th „	3	—	2	1	—	—	—	—	—	—	—	—
75th „	2	—	—	1	—	—	—	1	—	—	—	—
76th „	1	—	—	1	—	—	—	—	—	—	—	—
77th „	1	—	1	—	—	—	—	—	—	—	—	—
78th „	2	—	—	2	—	—	—	—	—	—	—	—
82nd „	2	—	—	2	—	—	—	—	—	—	—	—
83rd „	2	—	—	1	—	—	—	—	1	—	—	—
84th „	1	—	—	1	—	—	—	—	—	—	—	—
85th „	2	—	1	1	—	—	—	—	—	—	—	—
87th „	3	—	—	—	—	—	—	—	—	—	3	—
88th „	2	—	—	1	—	—	—	—	1	—	—	—
89th „	2	—	—	—	—	—	—	1	1	—	—	—
92nd „	2	—	—	1	—	—	—	—	1	—	—	—
93rd „	2	—	—	1	—	—	—	—	—	—	—	1
95th „	3	—	—	—	—	—	—	—	3	—	—	—
96th „	3	—	2	1	—	—	—	—	—	—	—	—
99th „	3	—	—	—	2	—	—	—	1	—	—	—
100th „	2	—	—	—	—	—	—	—	2	—	—	—
102nd „	5	—	1	2	—	—	—	—	2	—	—	—
103rd „	6	—	—	5	—	—	—	—	1	—	—	—
104th „	1	—	1	—	—	—	—	—	—	—	—	—
105th „	7	—	2	1	—	—	—	—	3	—	1	—
106th „	1	—	—	1	—	—	—	—	—	—	—	—
107th „	1	—	—	—	—	—	—	—	—	—	—	1
108th „	3	—	—	—	—	—	—	1	1	1	—	—
109th „	3	—	1	1	1	—	—	—	—	—	—	—
Rifle Brigade 2nd Battalion	1	—	—	—	—	—	—	—	—	1	—	—
Rifle Brigade 3rd „	1	—	—	1	—	—	—	—	—	—	—	—
Rifle Brigade 4th „	3	—	2	—	—	—	—	—	1	—	—	—
1st West India Regiment	2	—	—	1	—	—	—	—	1	—	—	—
2nd „ „	2	—	1	—	—	—	—	—	1	—	—	—
4th „	5	—	—	3	—	—	—	—	2	—	—	—
Ceylon Rifle Regiment	2	—	1	—	—	—	—	—	1	—	—	—
Cape Mounted Riflemen	3	—	—	1	—	—	—	—	2	—	—	—
TOTAL	601	—	98	167	26	6	40	49	125	*8	29	35
										18		

N.B.—Five of the men marked thus * were flogged for absence without leave and making away with necessaries.

W. PAULET,
Adjutant-General.

No. 8.

RETURN showing the Number of Men flogged during the year 1866, and specifying the Crimes for which the Punishment was inflicted.

Adjutant-General's Office, Horse Guards, S.W.,
4th July 1868.

REGIMENTS.	Number of Men Flogged.	CRIMES.									
		Mutiny.	Desertion.	Violence to Superiors and Insubordination.	Disobedience.	Quitting or Sleeping on Post.	Drunk on Duty under Arms.	Habitual Drunkenness.	Disgraceful Conduct.	Absence without Leave.	Making away with Necessaries.	Miscellaneous.
2nd Dragoon Guards	1	—	—	1	—	—	—	—	—	—	—	—
3rd „ „	1	—	—	—	—	—	—	—	1	—	—	—
4th „ „	1	—	—	—	—	—	—	—	—	—	1	—
1st Dragoons	1	—	—	—	—	—	—	—	—	—	—	1
7th Hussars	2	—	—	—	—	—	—	—	—	—	2	—
9th Lancers	2	—	1	1	—	—	—	—	—	—	—	—
10th Hussars	5	—	4	1	—	—	—	—	—	—	—	—
13th „	1	—	1	—	—	—	—	—	—	—	—	—
14th „	2	—	1	—	—	—	—	—	1	—	—	—
15th „	1	—	—	—	—	—	—	—	—	—	—	1
16th Lancers	2	—	2	—	—	—	—	—	—	—	—	—
19th Hussars	2	—	—	2	—	—	—	—	—	—	—	—
20th „	1	—	—	—	—	—	—	1	—	—	—	—
21st „	2	—	—	2	—	—	—	—	—	—	—	—
Royal Artillery	74	—	6	25	4	—	2	2	10	7	8	10
Royal Engineers	3	—	—	1	—	—	—	1	1	—	—	—
Military Train	6	—	—	3	—	—	—	—	2	—	—	1
Grenadier Guards, 1st Battalion	1	—	—	—	—	—	—	—	1	—	—	—
Coldstream Guards, 2nd „	3	—	—	3	—	—	—	—	—	—	—	—
1st Foot 1st Battalion	1	—	—	—	—	—	—	—	—	—	—	1
2nd „ 2nd „	6	—	—	2	—	—	—	3	—	—	—	1
3rd „ 1st „	3	—	—	1	1	—	—	—	—	—	1	—
3rd „ 2nd „	4	—	2	2	—	—	—	—	—	—	—	—
4th „ 1st „	7	—	1	2	—	—	—	1	—	1	—	2
5th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
5th „ 2nd „	4	—	1	—	—	—	—	—	1	—	2	—
6th „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
6th „ 2nd „	5	—	1	2	—	—	—	—	—	—	2	—
7th „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
7th „ 2nd „	5	—	—	—	—	—	—	—	1	—	4	—
8th „ 1st „	2	—	—	1	—	—	—	—	—	1	—	—
8th „ 2nd „	1	—	—	1	—	—	—	—	—	—	—	—
9th „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
9th „ 2nd „	3	—	—	—	—	—	—	—	1	—	2	—
10th „ 1st „	6	—	—	5	—	—	—	—	1	—	—	—
10th „ 2nd „	3	—	—	1	—	—	—	—	2	—	—	—
11th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
11th „ 2nd „	2	—	—	—	—	—	—	—	—	2	—	—
12th „ 1st „	15	—	2	4	1	—	—	—	8	—	—	—
12th „ 2nd „	5	—	—	4	—	—	—	—	1	—	—	—
13th „ 1st „	3	—	—	1	—	—	—	—	1	—	1	—
13th „ 2nd „	4	—	1	3	—	—	—	—	—	—	—	—
14th „ 1st „	4	—	1	1	—	—	—	—	2	—	—	—
14th „ 2nd „	6	—	—	3	—	—	1	—	2	—	—	—
15th „ 1st „	1	—	1	—	—	—	—	—	—	—	—	—
16th „ 2nd „	8	—	—	1	—	—	—	4	3	—	—	—
17th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
17th „ 2nd „	3	—	1	—	—	—	—	1	1	—	—	—
18th „ 1st „	3	—	—	1	—	—	—	—	1	—	1	—
18th „ 2nd „	23	—	5	6	—	—	—	1	8	—	—	3
19th „ 1st „	1	—	—	—	—	—	—	—	—	1	—	—
20th „ 1st „	2	—	1	—	—	—	—	—	—	1	—	—
20th „ 2nd „	2	—	—	2	—	—	—	—	—	—	—	—
21st „ 2nd „	2	—	—	2	—	—	—	—	—	—	—	—
22nd „ 1st „	11	—	9	—	—	—	—	—	—	—	2	—
22nd „ 2nd „	5	—	—	—	—	—	—	—	—	—	5	—
23rd „ 2nd „	2	—	—	1	—	—	—	1	—	—	—	—
24th „ 1st „	1	—	—	—	—	—	—	—	—	—	1	—
24th „ 2nd „	2	—	—	1	1	—	—	—	—	—	—	—
25th „ 1st „	9	—	—	—	1	—	—	—	7	—	1	—
25th „ 2nd „	2	—	1	—	—	—	—	—	—	—	1	—
26th „	4	—	—	3	—	—	—	—	1	—	—	—
27th „	1	—	—	—	—	—	—	—	1	—	—	—
28th „	1	—	—	1	—	—	—	—	—	—	—	—
29th „	2	—	—	1	—	—	—	—	—	1	—	—
30th „	4	—	2	—	—	—	—	—	2	—	—	—
31st „	1	—	—	—	—	—	—	—	1	—	—	—
32nd „	2	—	—	2	—	—	—	—	—	—	—	—
38th „	1	—	—	—	—	—	—	—	1	—	—	—
39th „	2	—	—	1	—	—	—	—	1	—	—	—
40th „	6	—	1	2	—	—	—	—	3	—	—	—

RETURN showing the Number of Men flogged during the year 1866—*cont.*

REGIMENTS.	Number of Men Flogged.	CRIMES.										
		Mutiny.	Desertion.	Violence to Superiors and Insubordination.	Disobedience.	Quitting or Sleeping on Post.	Drunk on Duty under Arms.	Habitual Drunkenness.	Disgraceful Conduct.	Absence without Leave.	Making away with Necessaries.	Miscellaneous.
41st Foot	1	—	1	—	—	—	—	—	—	—	—	—
43rd „	9	—	1	2	—	1	—	2	3	—	1	—
44th „	1	—	1	—	—	—	—	—	—	—	—	—
45th „	5	—	—	2	—	—	—	—	—	—	2	1
46th „	1	—	—	—	—	—	—	—	—	1	—	—
48th „	1	—	1	—	—	—	—	—	—	—	—	—
50th „	12	—	1	4	—	1	2	2	1	—	—	1
51st „	3	—	—	2	—	—	—	—	—	—	1	—
52nd „	3	—	1	1	—	—	—	—	1	—	—	—
53rd „	1	—	—	1	—	—	—	—	—	—	—	—
54th „	4	—	—	3	—	—	—	—	1	—	—	—
56th „	1	—	—	1	—	—	—	—	—	—	—	—
57th „	9	—	—	2	—	1	—	4	1	—	—	1
58th „	5	—	2	2	—	—	—	—	—	—	1	—
59th „	5	—	3	2	—	—	—	—	—	—	—	—
60th „ 2nd Battalion	4	—	1	2	—	—	—	—	—	—	1	—
60th „ 3rd „	2	—	1	1	—	—	—	—	—	—	—	—
60th „ 6th „	1	—	—	1	—	—	—	—	—	—	—	—
61st „	6	—	1	—	—	—	—	—	—	5	—	—
62nd „	4	—	—	2	—	—	—	—	2	—	—	—
65th „	3	—	—	3	—	—	—	—	—	—	—	—
66th „	2	—	—	—	—	—	—	—	2	—	—	—
67th „	4	—	—	1	—	—	—	—	3	—	—	—
68th „	16	—	—	1	—	—	—	10	3	—	—	2
69th „	1	—	—	1	—	—	—	—	—	—	—	—
70th „	4	—	—	—	—	—	—	—	4	—	—	—
71st „	1	—	—	1	—	—	—	—	—	—	—	—
73rd „	2	—	—	1	—	—	—	—	1	—	—	—
74th „	2	—	1	1	—	—	—	—	—	—	—	—
75th „	4	—	1	1	—	—	—	—	—	—	2	—
76th „	3	—	—	2	—	—	—	—	—	—	—	1
77th „	2	—	—	—	—	—	—	1	1	—	—	—
81st „	1	—	—	1	—	—	—	—	—	—	—	1
82nd „	2	—	—	1	—	—	—	—	—	—	—	—
83rd „	1	—	—	—	—	—	—	—	1	—	—	—
84th „	2	—	1	1	—	—	—	—	—	—	—	—
85th „	6	—	1	2	—	—	—	—	—	1	2	—
86th „	2	—	—	—	—	—	—	—	1	—	—	1
87th „	2	—	1	—	—	—	—	—	1	—	—	—
88th „	1	—	—	—	—	—	—	1	—	—	—	—
92nd „	1	—	1	—	—	—	—	—	—	—	—	—
94th „	3	—	—	—	1	—	—	1	1	—	—	—
96th „	1	—	—	—	—	—	—	1	—	—	—	—
97th „	2	—	—	1	—	—	—	1	—	—	—	—
98th „	3	—	—	1	—	—	—	—	2	—	—	—
99th „	4	—	—	2	1	—	—	—	1	—	—	—
100th „	3	—	—	—	—	—	—	—	3	—	—	—
101st „	2	—	—	2	—	—	—	—	—	—	—	—
102nd „	4	—	—	1	—	—	—	—	1	—	1	1
103rd „	1	—	—	1	—	—	—	—	—	—	—	—
104th „	2	—	—	1	—	—	—	1	—	—	—	—
105th „	6	—	—	—	—	—	—	—	3	—	3	—
106th „	1	—	—	1	—	—	—	—	—	—	—	—
107th „	4	—	—	1	—	—	—	—	—	—	3	—
108th „	6	—	1	1	—	—	—	—	2	2	—	—
109th „	3	—	—	—	—	—	—	1	2	—	—	—
Rifle Brigade 1st Battalion	1	—	1	—	—	—	—	—	—	—	—	—
Rifle Brigade 2nd „	3	—	1	1	—	—	—	—	—	1	—	—
Rifle Brigade 4th „	2	—	1	—	—	—	—	1	—	—	—	—
1st West India Regiment	1	—	—	1	—	—	—	—	—	—	—	—
4th „		—	—	—	—	—	—	—	1	—	—	—
Ceylon Rifle Regimen	3	—	—	1	1	—	—	—	—	—	1	—
Cape Mounted Riflemen	7	—	3	3	—	—	—	—	1	—	—	—
TOTAL	510	—	72	162	11	3	5	41	112	*11	51	29
										13		

* These men were flogged for absence without leave and making away with necessaries.

W. PAULET,
Adjutant-General.

No. 9.

RETURN showing the Number of Men Flogged during the year 1867, and specifying the Crimes for which the Punishment was inflicted.

Adjutant-General's Office, Horse Guards, S.W.,
4th July 1868.

REGIMENTS.	Number of Men Flogged.	CRIMES.										
		Mutiny.	Desertion.	Violence to Superiors and Insubordination.	Disobedience.	Quitting or Sleeping on Post.	Drunk on Duty under Arms.	Habitual Drunkenness.	Disgraceful Conduct.	Absence without Leave	Making away with Necessaries.	Miscellaneous.
3rd Dragoon Guards	1	—	—	—	—	—	—	—	1	—	—	—
5th „ „	1	—	—	—	—	—	—	—	1	—	—	—
1st „ „	1	—	—	1	—	—	—	—	—	—	—	—
13th Hussars	1	—	—	—	—	—	—	—	—	—	—	1
Royal Artillery	24	—	3	10	—	1	—	—	7	—	—	3
Royal Engineers	1	—	—	1	—	—	—	—	—	—	—	—
Military Train	2	—	—	2	—	—	—	—	—	—	—	—
Coldstream Guards, 1st Battalion	1	—	—	1	—	—	—	—	—	—	—	—
2nd Foot, 2nd Battalion	1	—	—	—	—	—	—	—	1	—	—	—
4th „ 2nd „	1	—	—	1	—	—	—	—	—	—	—	—
5th „ 2nd „	1	—	—	1	—	—	—	—	—	—	—	1
6th „ 2nd „	2	—	—	—	—	—	—	—	1	—	1	—
7th „ 2nd „	1	—	—	—	—	—	—	—	—	—	1	—
8th „ 1st „	1	—	1	—	—	—	—	—	—	—	—	—
9th „ 1st „	3	—	—	2	—	—	—	—	1	—	—	—
9th „ 2nd „	4	—	—	4	—	—	—	—	—	—	—	—
10th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
11th „ 2nd „	5	—	—	5	—	—	—	—	—	—	—	—
12th „ 1st „	7	—	1	3	—	—	—	—	3	—	—	—
12th „ 2nd „	1	—	—	—	—	—	—	—	1	—	—	—
14th „ 1st „	4	—	1	1	1	—	—	—	1	—	—	—
14th „ 2nd „	1	—	1	—	—	—	—	—	—	—	—	—
16th „ 2nd „	2	—	—	2	—	—	—	—	—	—	—	—
17th „ 2nd „	2	—	—	1	—	—	—	—	1	—	—	—
18th „ 1st „	3	—	—	2	—	—	—	—	1	—	—	—
18th „ 2nd „	7	—	—	1	—	—	—	—	2	—	—	4
20th „ 1st „	1	—	—	1	—	—	—	—	—	—	—	—
20th „ 2nd „	1	—	—	1	—	—	—	—	—	—	—	—
22nd „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
22nd „ 2nd „	5	—	—	1	—	—	—	3	—	1	—	—
25th „ 1st „	1	—	—	—	—	—	—	—	1	—	—	—
26th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
27th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
29th „ - - -	1	—	—	—	—	—	—	—	1	—	—	—
34th „ - - -	1	—	1	—	—	—	—	—	—	—	—	—
40th „ - - -	3	—	1	1	—	—	—	—	—	—	1	—
41st „ - - -	2	—	—	1	—	—	—	—	1	—	—	—
42nd „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
44th „ - - -	2	—	—	2	—	—	—	—	—	—	—	—
48th „ - - -	1	1	—	—	—	—	—	—	—	—	—	—
50th „ - - -	7	—	—	4	—	—	1	—	—	2	—	—
54th „ - - -	1	—	—	—	—	—	—	—	1	—	—	—
59th „ - - -	5	—	—	5	—	—	—	—	—	—	—	—
60th „ 4th Battalion	1	—	—	1	—	—	—	—	—	—	—	—
66th „ - - -	1	—	—	—	—	—	—	—	1	—	—	—
67th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
69th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
70th „ - - -	1	—	—	—	—	—	—	—	1	—	—	—
74th „ - - -	2	—	—	2	—	—	—	—	—	—	—	—
81st „ - - -	1	—	—	—	—	—	—	—	1	—	—	—
82nd „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
83rd „ - - -	1	—	—	—	—	—	—	—	1	—	—	—
85th „ - - -	2	—	—	2	—	—	—	—	—	—	—	—
89th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
90th „ - - -	3	—	—	3	—	—	—	—	—	—	—	—
94th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
96th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
100th „ - - -	1	—	—	1	—	—	—	—	—	—	—	—
102nd „ - - -	1	—	1	—	—	—	—	—	—	—	—	—
104th „ - - -	2	—	—	1	—	—	—	1	—	—	—	—
105th „ - - -	2	—	—	—	—	—	—	—	1	1	—	—
107th „ - - -	1	—	1	—	—	—	—	—	—	—	—	—
Rifle Brigade, 2nd Battalion	1	—	—	1	—	—	—	—	—	—	—	—
2nd West India Regiment	1	—	—	1	—	—	—	—	—	—	—	—
3rd „ „	3	—	—	3	—	—	—	—	—	—	—	—
4th „ „	4	—	—	1	—	—	—	—	3	—	—	—
Cape Mounted Rifles	2	—	—	2	—	—	—	—	—	—	—	—
TOTAL	150	1	11	82	1	1	1	4	34	4	3	8

W. PAULET,
Adjutant-General.

No. 16.

Royal Marines.

Courts-Martial, Returns of, for the five years ended 31st March 1868.

Date.	Numbers Tried.			Description of Court.				Offences.											Total Number of Charges.
	Officers.	Non-commissioned Officers and Men.	Total.	Officers.	Non-commissioned Officers and Men.			Officers.		Non-commissioned Officers and Men.									
				General.	General.	District and Garrison.	Detachment and Divisional.	Drunkenness.	Breaking Arrest.	Mutiny.	Desertion.	Absence.	Breaking out of Barracks.	Drunkenness.	Making away with Necessaries.	Insubordination, &c.	Disgraceful Conduct.	Miscellaneous.	
From 1st April 1863 to 31st March 1868.	4	3,643	3,647	4	13	1,025	2,605	3	1	–	467	1,625	463	541	1,925	446	139	606	6,216

Punishment awarded.																							
Officers.				Non-commissioned Officers and Men.								Acquitted.	Corporal Punishment.		Imprisonment wholly remitted.	Number of Men, and Charges preferred.						Number of Men Tried.	Number of Charges preferred (exclusive of Officers).
Cashiered.	To lose One Year's Seniority.	Severely Reprimanded and placed at the bottom of the List.	Acquitted.	Penal Servitude.	Imprisonment.	Corporal Punishment.	To be marked with Letter D.	Forfeiture of Pay for Drunkenness.	Reduction of Non-commissioned Officers. With Imprisonment.	Reduction of Non-commissioned Officers. Without Imprisonment.	To be discharged from the Service, and marked with the Letters B.C.		Inflicted.	Remitted.		One.	Two.	Three.	Four.	Five.	Eleven.		
1	1	1	1	5	3,541	139	365	335	18	39	10	44	78	61	18	1,427	1,901	289	20	5	1	3,643	6,212

Statement showing the different Periods awarded.																				Total.
Penal Servitude.			Imprisonment.																	
7 Years.	5 Years.	Total.	2 Years.	672 Days.	365 Days.	336 Days.	252 Days.	168 Days.	156 Days.	126 Days.	112 Days.	84 Days.	72 Days.	56 Days.	42 Days.	35 Days.	28 Days.	21 Days.	14 Days.	7 Days.	
1	4	5	6	1	8	13	1	157	1	5	154	339	1	313	1,217	645	501	136	35	8	3,541

Statement showing the actual Number of Men tried, with the Number of Convictions to each.

Number of Times Tried during the above Period.	Number of Men Tried.	Total.
10	1	10
9	2	18
8	7	56
7	10	70
6	22	132
5	49	245
4	91	364
3	191	573
2	397	794
Once.	1,381	1,381
—	2,151	3,643

Average yearly number of men borne on shore during the period named above was 7,957.
" " " trials " 729·4.

Per-centage of convictions of officers - 75
" acquittals " - 25

Per-centage of convictions of N.C. officers and men - 98·792
" acquittals " " - 1·208

Average yearly number of trials per Cent. 9·167.

Royal Marine Office,
21st April 1868.

J. Netterville Lowder,
Colonel, D.A.G.

REPORT

OF

THE COMMITTEE

APPOINTED TO ENQUIRE INTO

THE CONSTRUCTION, CONDITION, AND COST

OF THE

FORTIFICATIONS,

ERECTED, OR IN COURSE OF ERECTION, UNDER 30TH & 31ST VICT., AND PREVIOUS STATUTES.

TOGETHER WITH THE

MINUTES OF EVIDENCE

AND

APPENDIX.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS, ST. MART 'S LANE.

1869.

4135

Appointment of, and Instructions to Committee.

General Number 14.
1220

War Office, S.W.,

Sir, 16*th April*, 1868.

It appears to me extremely desirable (having reference to questions recently raised in the House of Commons) that a full enquiry should be made into the construction, condition, and cost of the fortifications and works erected, or in the course of erection, under the 30th and 31st Vict., c. 145, and previous statutes, by a competent Committee, I have the honour to inform you that the Officers and Gentlemen named in the margin have consented to undertake such enquiry, under your presidency, and to report to me the result.

Major-General Dickson, C.B., R.A.;
Major-General Simmons, C.B., R.E.;
Colonel Harness, C.B., R.E.;
Colonel Elwyn, R.A.;
J. Hawkshaw, Esq., C.E., F.R.S.
*

Plans of the works in course of construction will be laid before you, and accepting as approved the position of the forts and the general design of the works, the matters upon which I desire the information and opinion of the Committee are,—

1st. Whether these forts and works have been well and skilfully constructed with reference—

a. To their stability and permanency.

b. To the arrangements made or proposed to be made in them for the service of the guns and otherwise to meet the requirements of a modern armament.

c. To the power of resistance (offensive and defensive) that they offer to any attack to which they may be exposed.

d. To the cost incurred, and to the future expenditure that may be needed for their completion (if this enquiry can be readily accomplished by the Committee, and without involving them in a considerable sacrifice of time).

2nd. Whether any and which of the works, so far as the same have yet proceeded, are, with reference to their foundations, or otherwise, in an insecure condition, and need any and what support or reparation; and what would would be the probable cost of such support or reparation.

3rd. Whether the estimates in the schedule of the "Fortification Act of 1867," before referred to, will suffice for the completion of the works as contemplated, and if not, what additional sums will probably be required.

4th. For the purpose of enabling you to carry out this enquiry, I have requested His Royal Highness the Field-Marshal Commanding-in-Chief to cause the General Officers Commanding at the Stations to be instructed to give the Committee all requisite facilities. I have also desired the Officers of the War Department to give you the fullest information upon every matter upon which the members of the Committee may require it, and I have to express a hope that the enquiry will be conducted with as little delay as may be compatible with full investigation and report, and that the Committee will, if they deem it to be expedient, make a preliminary report on any of the subjects of enquiry.

I have the honor to be,

Sir,

Your obedient Servant,

J. S. PAKINGTON.

Admiral The Hon. Sir F. W. Grey, G.C.B.
&c. &c. &c.

* Lieutenant Ardagh, R.E., was appointed Secretary on the 28th April, 1868.

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REPORT.

TO HER MAJESTY'S PRINCIPAL SECRETARY OF STATE FOR WAR.

We, the undersigned, Members of a Committee appointed to enquire into the Construction, Condition, and Cost of the Fortifications and Works erected, or in the course of erection, under the 30th and 31st Vic., c. 145, and previous statutes, have the honour to make the following Report:—

PRELIMINARY STATEMENT.

Instructions.

1. The points to which our attention was directed by our letter of instructions, dated April 16th, 1868, were:

1st. Whether these forts and works have been well and skilfully constructed with reference—

a. To their stability and permanency.

b. To the arrangements made, or proposed to be made, in them for the service of the guns and otherwise to meet the requirements of a modern armament.

c. To the power of resistance (offensive and defensive) that they offer to any attack to which they may be exposed.

d. To the cost incurred, and to the future expenditure that may be needed for their completion (if this enquiry can be readily accomplished by the Committee, and without involving them in a considerable sacrifice of time).

2nd. Whether any, and which of the works, so far as the same have yet proceeded, are, with reference to their foundations or otherwise, in an insecure condition, and need any and what support or reparation; and what would be the probable cost of such support or reparation.

3rd. Whether the Estimates in the Schedule of the Fortification Act of 1867, before referred to, will suffice for the completion of the works as contemplated, and if not, what additional sums will probably be required.

These instructions were somewhat modified (see letters in Appendix No. I.) as regards the iron forts and shields, and we are not now called upon with reference to them, to give an opinion as to the amount of resistance which iron structures may be expected to offer.

2. In order to give a clear view of the present state of the works, and of the expenditure that has been incurred upon them, we propose first shortly to revert to the circumstances under which they were begun, and to give some account of the changes that have been since made in the original plans.

Defence Commission, 1859.

It will be remembered that in 1859 public attention was strongly drawn to the unprotected state of our Naval Arsenals, and the dangers to which the United Kingdom might be exposed by a foreign invasion. A Royal Commission was in consequence issued on the 20th August, 1859, appointing six officers of the Army and Navy, and one Civilian, Commissioners to enquire into the state and sufficiency of the Fortifications then existing or in progress for the defence of the United Kingdom, and to "offer such "suggestions as might seem to them meet, as (regard being had to the works completed "and in progress, and to the ordinary number of our Royal Artillery, voted by "Parliament) will render our United Kingdom in a complete state of defence."

General Report.

The instructions of the Secretary of State for War accompanying this Commission, and bearing the same date, directed the Commissioners to examine the plans of the works then in progress at—

Portsmouth (including the Isle of Wight and Spithead),
Plymouth,
Portland,
Pembroke,
Dover,
Chatham, and
The Medway,

and having inspected the ground, to consider what would be the best means of rendering those places defensible within as short a time as possible, and how they could be put in the most complete state of defence by permanent fortifications. They were also to consider what steps should be taken for defending the approaches to Woolwich.

Report of Defence Commission.

3. On the 7th February, 1860, the Commissioners made their report.

They began by stating their reasons for believing that neither our fleet, our standing army, nor our volunteer forces, nor even the three combined could be relied on as sufficient in themselves for the security of the kingdom against foreign invasion.

Par. 9.

They next considered the question of fortifications, and they pointed out that the objects proposed to be attained by fortifying any place, are to enable a small body of troops to resist a superior force, or to enable partially trained bodies of men to contend

Par. 12.

successfully with those more perfectly disciplined than themselves, and they stated that they were led to the conclusion that by a judicious application of fortifications, the means would be afforded of utilizing in the highest degree both the fleet and the regular army and the forces which would be brought in aid of it, and further, that without fortifications there is no mode of defence that would give the same amount of security to the country, and at the same time be so economical both in money and in troops.

Par. 14 and 15.

They recommended that the fortifications should be restricted to vital points, and those they considered to be the Royal Dockyards, and Woolwich, with the harbours of Portland, Dover, and Cork.

They next refer to the defence of London, and the importance of shielding the heart of the empire from attack, but as that question had not been brought under their consideration, they content themselves with pointing out the bearing which the fortification of the Dockyards and Arsenals would have upon it.

They then describe the general measures they would recommend, and conclude with a detailed report of the works they would propose for the defence of the places named in their instructions, in each case giving an approximate estimate of the cost of the works, and of the number of men required to garrison them; that number they estimated at 69,000; the amount of money required for the whole, including the purchase of land and barrack accommodation for 30,850 men, they estimated at 10,350,000*l.* In this amount was included the sum of 1,610,000*l.** for works already authorized, but for which the money had not been voted, and 1,885,000*l.* for the purchase of land.

Estimate of Defence Commission.

The armament for the works, they estimated, would cost 500,000*l.*, and they further recommended that 1,000,000*l.* should be applied to providing floating defences.

The total amount required they thus estimated at 11,850,000*l.*

Par. 29.

With reference to that portion of their instructions, directing them to consider what would be the best means of rendering the Dockyards and other places defensible within as short a time as possible, they recommended that the designs should be so contrived that the main ramparts and ditches should be formed without being delayed by the building of revetments, or the construction of bombproof barracks and permanent magazines, so that a certain degree of protection might be obtained in three or four months, and the amount of defence subsequently increased as the works progressed.

Par. 30.

For the execution of the works, they recommended that contracts for the excavations should be made and put into operation immediately after the general designs had been decided upon, and the land obtained. The building of escarp and counterscarp walls might be proceeded with as soon as the excavations were sufficiently far advanced for that purpose; in the meanwhile the detailed drawings and specifications for all the building portions of the work might be prepared, and in three or four months from the time of commencement, the whole might be in full operation.

* This sum included 150,000*l.* for completing the works already commenced at Portland.

4. The Government, after considering the Report, determined, with the sanction of Parliament, to raise by loan the money required for the purchase of land and the construction of the works, leaving the armament and floating defences to be provided for in the Annual Estimates. Steps taken by the Government.

Before applying to Parliament, they made important reductions in the estimates by omitting the following works that had formed part of the plan of the Royal Commissioners:—

At Portsmouth.—Two Spithead works, the three minor works on Portsdown Hill, and part of the advanced Gosport defences. Omissions at Portsmouth.

At Plymouth.—The Inner Line and part of the Outer Line of the North-East Defences, the whole of the Saltash position, and the connecting lines of the Western position. Plymouth.

Pembroke.—All the works on the north side of the haven except Fort Scoveston, and on the south side the line of works to protect the Dockyard. Pembroke.

Portland.—The purchase of land for the position of Wyke Regis. Portland.

Chatham and the Medway.—The Western Defences and the Grain Spit Fort. Chatham and the Medway.

Woolwich.—The whole. Woolwich.

The reduction in the estimates of the Commissioners consequent on these omissions, exclusive of several minor works not separately estimated, amounted to— Further reductions.

	£
At Portsmouth	480,000
„ Plymouth	1,470,000
„ Pembroke	380,000
„ Portland	100,000
„ Medway and Sheerness	100,000
„ Chatham	700,000
„ Woolwich	700,000
	£3,930,000

At the same time they added 150,000*l.* for the site for a Central Arsenal, making the net reduction 3,780,000*l.*

This amount, deducted from the total estimate of 10,350,000*l.*, leaves 6,570,000*l.* as the portion of the Commissioners' estimate (including land) due to the works sanctioned in 1860. Of this sum 390,000*l.* were voted in the Annual Estimates of 1860–1, leaving, according to the estimate of the Commissioners, 6,180,000*l.* as the amount required for these works. Reduced Estimate.

The estimate of the Commissioners was stated by them to be only approximate, as no detailed plan had been made, but they had every reason to believe that it would be found sufficient, and it was adopted in the return to Parliament in 1860 of the estimated cost of the new works. Parly. Paper, No. 448.

This expectation has not been realized, and the cost of the works has very greatly exceeded their estimate, and this may be attributed to the fact that in the interval between the date of the Report and the present time, many circumstances have combined greatly to enhance the cost of the works. Insufficiency of Estimates.

5. Among these causes may be mentioned:—1st. The construction of several of the works on a much larger scale and adapted for a greater number of guns than those recommended by the Commissioners. 2nd. The necessity of having recourse, in the Sea Defences, to iron structures of a most costly nature, and of adding largely to the thickness and strength of the masonry in all the works, to enable them to resist the heavy projectiles from rifled guns that have since been introduced into all services. 3rd. A considerable increase in the price both of labour and materials. 4th. Unforeseen difficulties in some places in obtaining secure foundations; and lastly, a larger demand for the land purchased than had been anticipated at the time of their Report. Causes which tended to increase the cost of the works.

It is not possible to institute any close comparison between the estimates as framed by the Commissioners and those now found to be required, since, in many instances, the positions selected by them have not been adopted, and different ground has been taken up, while the works designed and constructed differ widely from those originally contemplated.

6. From a Memorandum of the Secretary of State for War, of the 12th May, 1862, it appears that already at that time it was calculated there would be an excess upon the estimate of 1860 of about 300,000*l.* on the cost of land, and of about 380,000*l.* on that of works, making a total probable excess of 680,000*l.* Modification of Original Estimate.

This excess was provided for in the Schedule of the Act of 1862 (25 & 26 Vic., cap. 78), which was the first of the statutes referred to in our instructions, which contains an estimate of the total cost of each work or group of works.

In this schedule the cost of the works was separated from that of the land, for which a special item was introduced, combining in one sum the cost of the land for all the works. As money was required, the new Acts of Parliament enumerated in the margin were passed, to which similar schedules were attached, containing the total estimated cost at the time of the passing of the Act of each work or group of works.

26 and 27 Vic., cap. 80.
27 and 28 Vic., cap. 109.
28 and 29 Vic., cap. 61.
30 and 31 Vic., cap. 145.

In these schedules variations have been made occasionally to considerable amounts, to suit the changes in the works, and in some cases several have been grouped together, so that the amounts appropriated to each group have become available for any of the works in the group. In our detailed Report upon each work or group of works, we have noted all these changes, the aggregate result of which is shown in the following Table, which is a summary of the schedules. In the amount shown for works in each year, up to 1865 inclusive, deductions have been made for the Central Arsenal, the East Defences of Chatham, and the Maker Barracks, which were estimated separately in those years, but have been omitted altogether in the Schedule of 1867; but no account is taken of the omission of some smaller works, and reductions in others, which have been made with a view to a reduction of the estimates, but all of which are noticed in our detailed Report.

The last column contains a summary of the estimated cost of the various works when completed, exclusive of all sums defrayed, or proposed to be defrayed, from other sources than the Loan for Defences.

Summary of Estimates in the various Schedules of the Acts of Parliament, and of the Estimated Cost of the Works in 1869.

	1862.	1863.	1864.	1865.	1867.	1869.
	£	£	£	£	£	£
Works	5,630,000	5,620,000	5,620,000	5,625,000	5,715,000	6,084,069
Incidental expenses ..	50,000	120,000	120,000	140,000	165,000	194,835
Site for Central Arsenal	150,000	150,000	150,000	150,000	..	..
Land	1,030,000	1,030,000	1,030,000	1,080,000	1,115,000	1,102,033
Total	6,860,000	6,920,000	6,920,000	6,995,000	6,995,000	7,380,937
Providing and fixing iron shields	..	..	..	..	475,000	570,500
Deduct for works omitted,—viz., Chatham E. Defences, Maker, and Central Arsenal	670,000	670,000	670,000	670,000	..	..
Total cost of works now sanctioned.	6,190,000	6,250,000	6,250,000	6,325,000	7,470,000	7,951,437

7. It is no part of our duty to express any opinion on the original plans, or on the changes that have been made in them, except so far as the cost incurred has been affected by them; but in estimating the resisting powers of the various works, the absence of collateral support and the facilities for attack afforded to an enemy by the omission to occupy some important position, become of paramount importance, and we shall have occasion, in the subsequent part of our Report, to call attention to some instances in which the defence might thus be seriously compromised.

Importance of some of the works omitted.

Of the great value of the works that have been constructed, and the formidable obstacle they would oppose to an enemy, there can be no doubt; but to give to those vital points that complete protection contemplated in the Royal Commission, it would be necessary, whenever the danger of attack might arise, to take immediate measures for securing the weak points left in the lines by the omissions alluded to.

Causes which tended to prolong the duration of the enquiry.

8. The length of time occupied by our inquiry demands some explanation from us. Having first, by examining General Lefroy, Colonel Jervois, Admiral Key, and other competent witnesses, informed ourselves of the general arrangements proposed, and of the nature and power of the artillery likely to be employed both in the attack and defence of the various works, we entered upon a personal investigation of the state of each work, and of the plans upon which their construction was being carried on. In the course of this examination it became evident that many of the works, however well

adapted they might have been to their object at the time the plans were made, would require additional strength and considerable modifications to enable them to resist the more powerful artillery since introduced, and to meet the requirements of the new armament proposed for them. In others, the plans had been left incomplete, pending the experiments in progress for ascertaining the relative powers of iron structures and rifled projectiles.

Before, therefore, we could satisfactorily fulfil our instructions, it became necessary to refer back the plans and estimates to the War Department for careful revision, and it was not till the close of the last, and the beginning of the present year, that the finally approved plans were laid before us; and even now, at the date of our Report, the plans, in some cases, in consequence of the progress of invention, and more especially looking to the probable adoption of the Moncrieff gun carriage, have only been provisionally approved, pending the result of further experiments.

From that time, we have been constantly and assiduously employed in the examination of the plans and estimates, and we trust that the time so occupied will prove to have been not ill-spent, since it has enabled us now to lay before the Secretary of State a full and accurate account of the various works, of their cost, and of the amount required to complete them.

In the prosecution of this arduous duty, we have received the most cordial assistance from the Officers of the Fortification Department, and we cannot speak too highly of the able and skilful manner in which the designs have been prepared by them.

With these preliminary remarks, we now proceed to the more immediate subject of our inquiry.

Committee visited each work.

9. We have personally examined the whole of the works we are directed to report upon, and except in one or two cases where individual members were unavoidably prevented from accompanying their colleagues, we have together visited each work in succession.

Witnesses examined.

We have also called before us and examined such of the Commanding Officers of the Royal Engineers, and of the officers in charge of the works in each district, as we thought necessary.

Position and General Design of works accepted as approved.

In accordance with our instructions, we have in all cases accepted as approved the position and general design of the works, and strictly limiting our inquiry to the matters specially pointed out to us, we have not thought it our duty to offer any remarks upon the general plans, except in those cases where, as we have already stated, we think the power of a work to resist an attack might be seriously impaired by the absence of some collateral support, or by some faulty construction.

General observations applicable to all the works.

Before entering upon the consideration of each separate work, we propose first to offer some general observations applicable to the whole, and to deal with some points common to them all, connected with the service of the guns, the magazine arrangements, and the protection of the magazines and gun detachments from an enemy's fire, not, however, including in the latter, for the reasons already stated, the various modes of applying iron to defensive purposes.

And first as regards stability and permanency.

Stability and permanency of works. Clause *a*.

10. We have satisfied ourselves that the works throughout have been well and solidly constructed, and with a due regard to permanency and stability. We have carefully examined into the truth of the allegations that many of the works are in an insecure condition, and we find that, although accidents have occurred during their construction, those accidents have by no means exceeded what might have been reasonably expected in works of such magnitude, and we believe that the statements made with respect to their want of stability are greatly exaggerated. It is to be remembered that the sites for these works have been selected solely for the advantages they offered for purposes of defence, and that many of those sites presented great difficulties, some being in the sea, on shoals or in deep water, exposed to the action of violent storms and heavy seas; others on very treacherous soil, ill-suited for the foundations of heavy works, and others again where heavy slips were fully to be expected. The measures adopted to meet the difficulties as they arose appear to us to have been generally judicious, and though further difficulties may still be met with, it may be expected that the designs now adopted may be so carried out as to secure the necessary stability and permanency.

Arrangements for the service of the guns, &c. Clause *b*.

11. Following the order of our instructions, we next advert to the arrangements for the service of the guns.

The introduction of heavy rifled artillery has inevitably led to great changes in

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those arrangements; and, as the same cause has also led to many changes in the construction of the works, to avoid repetition, we shall, at the same time, advert to some points connected with their resisting power.

See Appendix No. III.

In the Appendix will be found extracts from the Instructions for Coast Batteries, drawn up in 1853, and revised in 1861. At that time, the 68-pounder gun was the heaviest gun contemplated, and the Committee of 1861 did not anticipate the introduction of rifled artillery of more than one nature (probably the 110-pounder breech-loading Armstrong).

All the arrangements therefore, the space between the guns, and the thickness of the parapets, were fixed with reference to those guns; and it was by the rules laid down in those instructions that the designers of the new works under the Loan were guided. Fortunately, before the works were generally too far advanced, the success of the heavier rifled guns had been established, and the necessity of making provision for them was recognized. The space between the guns was increased; the disposition of the magazines and shell stores was altered; for the sea defences iron was gradually substituted more and more for stone, until in some of the works for the outer walls of the superstructure iron alone will be used.

To give greater security to the magazines and to facilitate the supply of powder to the guns, the basements under the gun casemates have been appropriated generally to the storage of ammunition, and direct communication has been established between the magazine passages and the gun casemates above, by means of lifts. To guard against danger, separate passages are provided for the powder, the shells, and for lighting the magazines.

12. The new arrangements had been submitted to the Artillery Authorities on the 4th September, 1865, and again on the 30th July and 7th February, 1867, and approved by them; they are fully described in the paper referred to, and we need not here enter into any details respecting them. We have ourselves carefully considered those arrangements, and, with reference to them, we have examined General Lefroy, Rear-Admiral Cooper Key, General Taylor, Colonel Jervois, and Colonel Wilmot.

Experiment on service of guns, and magazines. See Appendix No. V.

We have also witnessed at Gilkicker, practice with two 12-ton guns in casemates, fitted at our request with the appliances proposed for working them. Although from the arrangements being incomplete, and the men not sufficiently accustomed to them, the supply of ammunition was less rapid than with more experience and more complete fittings it would probably have been, yet the result of that trial led to the conclusion that it would be difficult, in a hot action, to keep up a sufficiently rapid supply of shells by means of the lift alone, and it became a question of importance whether shells of large size, with heavy bursting charges, could be safely placed in any convenient place near the guns.

Experiment on Shells. See Appendix No. V.

To ascertain this, a pile of shells was fired at at Shoeburyness, and, although many of them exploded with destructive effect, the result appeared to be that there would be little risk in placing them in any position where they would not be exposed to direct fire, or to the impact of heavy fragments of shells bursting near them.

Upon the whole, we think that the arrangements are good, and we have little doubt that, with the improvements in details, which further experience will probably suggest, they will be found well adapted for the service of the guns.

13. In some of the works, the shell passages are too narrow to admit of men passing each other freely, and we recommend that, where the guns are to be served directly through them from the stores, they should be made in future not less than 5 feet wide.

The use of the shell passages as the means of access to the light boxes is not in our opinion objectionable, and in those batteries where the space available for the storage of ammunition is limited, that plan might in future be safely adopted.

Dampness in magazines.

In many of the works our attention was called to dampness in the magazines, and in several the floors have already decayed to an extent to make it necessary to renew them. In some few instances this dampness may have been caused by imperfect drainage, but in the great majority of them it has undoubtedly been caused by the admission of the external air at times favourable to the deposit of moisture on the walls.

See Appendix No. IV.

A paper, drawn up by our Secretary, Lieutenant Ardagh, will be found in the Appendix, in which the question of the ventilation of magazines is ably discussed, and the principles on which it should be based clearly enunciated. We believe that the treatment recommended by him would, to a great extent, remedy the evil. As, however, in many cases the magazines are deeply buried in the earth, and the conditions, even with the greatest attention, unfavourable to the preservation of perishable material, it is worth consideration whether asphalte might not safely be substituted for wood whenever it is necessary to renew the floors.

14. Another change, most valuable in itself, has also exercised a material influence on the designs for the various works.

Improvements in Barracks.

By a reference to the Report of the Defence Commissioners, it will be seen that they recommended that barrack accommodation should be provided for a much larger number of men than the works will now afford. In some instances where it was thought unnecessary to incur the expense, the cost of the work has been reduced by diminishing or omitting the barrack accommodation, while in all the amount of accommodation in the buildings themselves has been largely reduced, from the following cause :—

In 1861, the Commissioners for improving the sanitary condition of Barracks and Hospitals found that these buildings generally were deficient in ventilation, drainage, water supply, and in the provisions for warmth, cooking, washing, recreation, &c., to such a degree as to be detrimental to the comfort, and injurious to the health of the soldiers.

They recommended that instead of 400 cubic feet per man, not less than 600 cubic feet should in future be allowed, and in hospitals 1,200 cubic feet per bed.

The number of men that could be accommodated in barrack-rooms was thus reduced one-third, and in hospital wards nearly one-half below that formerly allotted. Extensive recommendations were also made by them for the improvement of barracks in other particulars ; and general rules for the construction of barracks and hospitals, with their appliances, were laid down.

15. These recommendations were made after the Defence Commissioners had reported, and while the designs for the various works recommended by them were in preparation. In the Appendix will be found an extract from the Report on casemated-barrack-rooms, and it will be seen that the Sanitary Commissioners expressly called attention to the necessity of adopting in the works about to be constructed the improvements suggested by them. In accordance with their recommendation these improvements have as far as possible been adopted, the increased space has been allotted to men and patients; and libraries, canteens, recreation rooms, and schools, have been added where practicable.

See Appendix No. VI.

The result has been a large reduction not only in the number of rooms appropriated as barrack-rooms, but also in the number of men allotted to each room, and a consequent large increase in the cost of housing the soldiers.

This increased cost is no doubt in a great measure repaid by the improvement in the general condition and comfort of the men, and by a diminution of disease. At the same time one effect has been that as the size of the works could not be increased without adding largely to their cost, and developing them to an extent unnecessary for the defence of the position they occupy, the number of men they can accommodate in time of peace is reduced much below that necessary for a state of war, although the amount of bombproof cover remaining the same, would, when required, be made available to the same extent as before.

Power of resistance. Clause *c*.

16. The next clause, *c* of the 1st Articles of our Instructions, relates to the powers of resistance of the various works.

At a very early period of our enquiry our attention was directed to the important question—what amount of resistance might granite walls and earthen parapets be expected to oppose to the powerful rifled shot and shell of the present day? On this point we examined Brigadier-General Lefroy, Rear-Admiral Cooper Key, General Taylor, Colonel Wilmot, and Colonel Jervois. From their evidence it appeared that the data necessary for determining this question were scarcely sufficient to enable us to arrive at any very accurate conclusion. The opinion of these witnesses appeared to be that granite walls and piers 14 feet 6 inches thick might be breached by a continued fire from heavy rifled guns, but that they would probably be found sufficient to resist the attack of ships which when engaging forts would have great difficulty in maintaining a fire of sufficient accuracy to attain that result.

The amount of penetration into earth appeared to be equally uncertain, but Colonel Jervois thought it not improbable that it might be necessary to give additional strength to parapets by substituting concrete for a portion of the earth. Thinking it most desirable that this question should be set at rest, we suggested to the War Department, in a letter of the 18th May, 1868, that experiments should be made to test the resisting powers of masonry and earthwork.

Appendix No. I.

This suggestion was approved by the Secretary of State, and directions were given that the necessary preparations for carrying out such experiments should be made. Some progress had been made in these preparations, when at a later period we were informed that any further proceedings in the matter were for the present postponed. In the

General Report.

interval a Minute of the Ordnance Select Committee which had accidentally been omitted from their records was laid before us. It recorded the amount of penetration of heavy projectiles into earth, as ascertained in May 1866, on the demolition of a butt at Shoeburyness into which heavy shot had been fired from a casemate in the month of March. From that minute, and from other data, a table has been compiled by our Secretary, which may be looked upon as giving the approximate amount of maximum penetration which heavy rifled guns of different calibres may be expected to attain.

Appendix No. III.

17. Should these calculations be borne out by future experience, it may be concluded that walls of granite and masonry, 14 feet 6 inches thick, will be found sufficient to meet such an attack from ships as they are likely to be subjected to, but that it will be necessary to substitute concrete or some other hard material for earth to a certain extent in the parapets, both of the Sea and Land Defences, wherever it may not be practicable to increase the thickness up to the limits given in the table.

This course has already been adopted in many cases, and especially would it be followed in those works in which it is proposed to apply the Moncrieff system. In the works for land defence the parapets only are formed, and it is not intended to cut the embrasures or lay the racers for the guns, until a necessity arises for mantling the works and placing them in a state of defence; thus the measures necessary to adapt them to the Moncrieff system, and the strengthening of the parapets, may safely be deferred till the details of that system are more fully worked out, and we strongly recommend that in the interval the proposed experiments for testing the resisting power of various materials should be carried out.

Moncrieff Gun Carriages.

18. The introduction of the Moncrieff gun carriage will also have an important bearing on the resisting power of some of the works in which it is proposed to adopt it.

Designs for the adaptation of these works to this system have lately been laid before us, in some cases as approved plans, subject only to the condition that the gun carriage should prove as suitable for heavier guns as for the seven-ton gun; in others as alternative plans subject to further consideration. In the Appendix will be found a tabular statement of the works to which it is proposed to apply the system, showing the change in the armament and the financial effects that would result from the alteration.

Appendix No. VIII.

19. There are four classes of batteries, as now designed, to which it is proposed to apply it:—

1st. Batteries *en barbette*.

2nd. Batteries with open embrasures.

3rd. Batteries with embrasures to be protected by iron shields.

4th. Casemated batteries.

In addition to these it is also proposed, in some cases, to substitute Moncrieff gun pits for revolving turrets.

In the first case the Moncrieff system will give increased protection to the guns and gun detachments. The minimum height at which barbette batteries may safely be adopted, and below which it would be desirable to substitute for them batteries for guns on Moncrieff carriages, must be determined by the peculiar conditions of each case, depending on the distance and width of the channel to be protected, and the position which ships can take up for attack.

In the second case, the Moncrieff system appears to offer still greater advantages in the increased strength that may be given to the parapets, in addition to the greater protection to the guns and men.

In both these cases the conversion will be attended with some increased cost.

In the third case the parapets will also be strengthened, and a great saving effected by dispensing with costly iron shields, and the power of each separate gun will be extended over a much larger area, by the greater lateral range allowed by the Moncrieff system.

The amount of protection must depend, in either system, on the character of the position, and the measures adopted to protect the guns and gun detachments from enfilade fire.

In the fourth case, that of casemated batteries, the comparative advantages and disadvantages of each system will probably be the subject of very different opinions.

Having previously called the attention of Captain Moncrieff to the plans of the Thames Forts, as an example of the mode in which such works might be adapted to his system, we requested him to come before us, and to state his opinion upon them. From his statement, it appears that he looks upon these designs as exhibiting, in a very

inferior degree, those advantages which his system, carried out in its integrity, is calculated to afford. He pointed out some objections deserving of attentive consideration, though, if the work already done is to be made use of, some of them could not probably be removed. We did not think it necessary to enter into any lengthened discussion of the plans with him, since we are not called on to decide upon them, nor could we have done so without materially delaying our Report. We have, therefore, only to observe that the propriety of adopting his system must, in each case, be considered with reference to the position and circumstances of the work; and after a careful examination of the relative advantages and disadvantages offered by it, as compared with the system for which it is proposed to substitute it.

In the last case, where it is proposed to substitute Moncrieff gun-pits for turrets, both systems are yet so untried that we can give no decided opinion on them. Should the 25-ton guns be successfully worked on a Moncrieff carriage, and with sufficient rapidity, the saving of expense would offer a powerful inducement for preferring that system to the costly turrets.

Expenditure.

20. The last clause of the 1st Article of our Instructions, relating to the cost incurred and the future expenditure required, as it has occupied a large portion of our time, demands more notice.

We have already stated the circumstances under which the works were begun, and the recommendations of the Defence Commissioners that, as soon as the general designs had been decided upon, and the land purchased, the excavations should at once be commenced, and the ramparts proceeded with; and while they were in progress the detailed drawings and specifications for the completion of the works should be prepared.

Immediate commencement of works recommended by Defence Commission.

This course was followed, and contracts were entered into for the first portions of the works, and followed by fresh contracts for the remaining portions. We have enquired into the manner in which the detailed estimates on which the contracts were based were made out, and we are satisfied that much care was bestowed upon them, and that they were framed with a due regard to economy.

Mode in which works were carried out.

21. At the same time, it followed from this course of proceeding that the total estimate, as first submitted to Parliament, could only be an approximate one, until the details for the completion of the whole could be got out.

In the execution of the works, different courses have been followed, as the circumstances of time and place made advisable. The usual course was, in the first instance, to make contracts for the earlier portions of the works for a lump sum, based on bills of quantities agreed upon between the Contractors and the Officers of the War Department. The subsequent contracts were generally on a schedule of prices, subject to a percentage of increase or diminution, according to the terms agreed upon. In some cases, after the completion of the first contracts, or on the failure of the contractors, the works were continued under the immediate direction of the Engineer Department, the labour being either hired, or military, or the two combined.

At Portland, the works at the Verne and Breakwater have been chiefly performed by convicts, and at Cork, the works at Fort Carlisle (after the excavation of the ditches and formation of the ramparts), and Fort Westmoreland, Spike Island, were first carried on by convict labour, and are now continued by military labour.

From the evidence of the officers superintending the works, we find that the employment of military labour has led to a considerable diminution of expenditure, and that the work so performed is in every way satisfactory, and that the transfer of the execution of the work from the Contractors to the Engineer Department, has not been disadvantageous to the public.

22. Various changes were from year to year made in the Estimates laid before Parliament. In the earlier schedules no separate provision was made for iron shields. It will be seen from the evidence of Colonel Jervois that the iron protection to embrasures, contemplated in 1860 and 1862, was not of an expensive nature, and it was considered that the cost of it would be covered by the original estimate. When the Schedules of 1864 and 1865 were framed the use of more expensive shields was contemplated, but as no estimate of their cost had been prepared no special provision was made for them; we think, however, that it is to be regretted that no intimation was then given that an addition to the estimates would at a future time be required to defray their cost, and that the omission of any such notice was likely to create the erroneous impression that the works could be completed for a smaller sum than that which would undoubtedly be required to put them in a proper state of defence.

2513, *et seq.*

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Col. Jervois' Report in 1867.

Increased protection necessary against Heavy Guns.

Inadequacy of Estimates.

23. In 1867 a Report was made by Colonel Jervois, and laid before Parliament, of the state of the works, the cost incurred, and the future expenditure required; and in this Report, for the first time, the estimated cost of iron shields and iron superstructures was separately introduced. The estimate in the Schedule of the Act of that year was revised to meet the altered circumstances, but subsequent experiments have shown that, even then, the power of rifled guns was not sufficiently appreciated, and a great increase in the amount of protection has been found necessary, involving a corresponding increase of expenditure.

In some instances the estimate of 1867 was undoubtedly inadequate to complete the works upon the plans then approved. In the works on Portsdown Hill this deficiency in the estimate was the most marked; in the report on those works an explanation of the mode in which the estimate was framed, and our opinion on the course adopted will be found.

From these general remarks we now proceed to report upon each work in detail.

PORTSMOUTH.

GENERAL REPORT.

Recommendations of the Defence Commission.

24. In their Report the Royal Commissioners divided the Sea Defences of Portsmouth under five heads :—

1. The entrance to the harbour.
2. The prevention of a landing within the fortified position to landward.
3. The protection of the anchorage at Spithead, and of the dockyard from bombardment.
4. The defences of the Needles Passage.
5. The measures necessary to prevent an enemy obtaining a footing in the Isle of Wight.

The Land Defences they classed as the Portsdown Hill and Gosport Positions.

Sea Defences.

Spithead Defences.

25.—1. For the first object, the defence of the channel leading into the harbour, they considered that the existing works strengthened by additional batteries at Southsea would be sufficient.

2. To oppose a landing to the eastward of the harbour, Southsea Castle, and Fort Cumberland, with the two intervening forts about to be constructed at Lumps and Eastney, would suffice; and to the westward, the lines in progress at Stokes Bay with their batteries, and an extension of the battery at Gilkicker, would be also sufficient.

3. The defence of Spithead and of the dockyard from bombardment was the next and most important point of their enquiry.

After describing some of various schemes that had been suggested, they recommended that the casemated forts, which it had already been proposed to construct on the Horse Sand and No Man's Land Shoals, should be proceeded with, that a work should be constructed between that on the Horse Sand and Portsea Island, another on the Spit Sand, and a fifth on the Sturbridge Shoal, with batteries at Appley House and Nettlestone Point in the Isle of Wight. The most important of these works they recommended to be built of masonry faced with hard granite, with three tiers of guns in casemates and embrasures in wrought-iron, and with guns and mortars on the roof.

They go on to state that, after having given the most thorough consideration to this question, they were of opinion that nothing short of the project proposed would meet the necessities of the case.

Defence of Needles.

4. For the defence of the Needles they did not consider the existing works at Hurst Castle, Sconce Point, and Cliff End would suffice, and they recommended that batteries should be constructed on the heights above Cliff End,—at the point between Totland and Coldwell Bays, at Hatherwood Point, and near the Needles Point, and that casemated batteries should be substituted for the batteries at Hurst Castle. For the protection of the batteries on the southern side of the channel, and to prevent their being taken in reverse, they recommended a work between Cliff End and Freshwater, with barrack accommodation for the men to work the additional guns recommended by them.

Defence of Isle of Wight.

5. Under the last head, the defence of the Isle of Wight, they considered that the northern shore would be sufficiently protected by the works already recommended.

For the defence of the south-west coast they recommended a military road between Chale and Compton Grange, with two towers, one near Brook, and one near Brixton, and a battery with a keep in its rear on Atherfield Point. For the defence of Sandown Bay, affording "the best and, indeed, the only good landing place" on the south side of the island between the Needles and Spithead, they recommended that a new permanent work should be substituted for the old bastioned fort then existing, and that batteries with keeps in their rear should be constructed on the rising ground near Yaverland, at Languard (to the westward of Sandown), and at a point below Sandown

PORTSMOUTH.

Barracks; that, to protect the rear of the batteries on the eastern side of the bay, a tower should be placed on the summit of Bembridge Down; and lastly, a battery with a keep in its rear on St. Helen's Point, to oppose a landing between Bembridge and Nettlestone Point.

26. The measures recommended by them for the Land Defences were as follows:—

Land Defences.

1. The occupation of the position on Portsdown Hill by four principal works, at Crookhorn, at the Windmill, the Fir Clumps, and Nelson's Column; three minor works at intervening points; and a line of ditch and rampart connecting the flanks of the position with Langston Harbour and Portsmouth Harbour, and with two detached works in advance of the flanks.
2. The construction of three works in advance of the line between Forts Gomer and Elson; one on the right near Newgate, one in the centre near Roome, and the third in advance of Browndown near the shore.
3. The completion of the three works then in progress between Forts Gomer and Elson.
4. And the completion of the strong lines already designed behind the Hilsea Channel to take the place of the insignificant field works there existing.

Reduction of Estimates.

27. We have already given a summary of the changes made in this scheme for the Sea Defences; we now proceed to show more in detail what those changes were, and their effect on the financial part of the plan.

The works struck out at Portsmouth by the Government, before going to Parliament, would have cost, according to the estimate of the Commissioners, 460,000*l.*

These works were:—

1. The intermediate work between the Horse Sand and Portsea Island.
2. The work on the Spit Bank.
3. The two works, one near Roome and the other at Lee Farm in advance of Brown down, forming part of the Gosport Advanced Position.

Before the first grant was voted, a further reduction of 20,000*l.* was made by omitting the connecting lines between Forts Gomer and Elson. Subsequently the difficulty of obtaining a foundation on the Sturbridge Shoal made it necessary to abandon that position, and it was proposed to substitute two smaller works on the Spit Bank and Ryde Sand. The latter it has also been found necessary to give up from the same difficulty of obtaining a foundation.

Changes in Sea Defences.

28. In the works themselves great changes have been made to meet the advance in the power of artillery.

In the two large forts on the Horse Sand and No Man's Land Shoal an iron superstructure to mount 49 guns in two tiers has been substituted for the granite fort of three tiers with iron embrasures mounting 120 guns. In the new design preparation is also made for five turrets to carry ten of the heaviest guns that may be adopted into the service; with this addition, the power of the forts against ships will far exceed that of the original works with their more numerous but lighter guns; these turrets have not yet been sanctioned, and no provision is made for them in the Estimates. Arrangements are also proposed for introducing into the forts the electric wires required for submarine defence.

A reduction has also been made in the Spit Bank work, now designed to mount 15 guns in one tier, with preparation for two turrets. In this case the sea face alone is to be of iron, the granite walls being retained on the land side. Another fort of similar construction has been placed near the edge of the shoals in front of St. Helen's Point, instead of the work contemplated on that Point, and a heavy mortar battery with five rifled guns at Puckpool has been substituted for the two works at Appley House and Nettlestone Point.

sle of Wight.

29. In the Isle of Wight, for the defence of Sandown Bay, the work at Languard has been given up, and another work at Redcliffe, to the eastward, added. The three works at Brixton, Brook, and Atherfield have been given up, and a military road alone made from Freshwater to Chale.

The new casemated batteries at Hurst Castle and the auxiliary batteries at Southsea, are much more powerful than those contemplated by the Commissioners; and lastly, at Gilkicker, instead of only strengthening and extending the batteries to give an addition of nine guns, a new and powerful casemated work has been constructed, and a mortar battery for 16 mortars is to be added between Gilkicker and Fort Monckton.

30. The financial effect of these changes will be stated at the end of the report on each group of works; and it is only necessary here to observe that the increase in the expenditure has not arisen from any want of care or of a due regard to economy in their construction, and that the manner in which the works have been constructed reflects great credit on the officers to whose supervision they have been committed, and is well calculated to ensure their stability and permanency. PORTSMOUTH. Financial effect.

SEA DEFENCES.—OUTER LINE.

SPITHEAD WORKS.

HORSE SAND FORT.

31. This is a circular work, situated on the Horse Shoal, upon which, at a depth of 11 feet below low water spring tides, a level space having been first prepared, the foundations were laid in the form of a ring 231 feet in external diameter, and 53 feet 6 inches in thickness at the base, with granite facing on the outside, and Bramley Fall or Portland stone on the inside, the intervening space being filled with massive concrete blocks. Design. Foundations.

The space thus formed inside the ring was filled with clay and shingle, and a thick bed of concrete laid thereon, to afford foundations for the inner portion of the superstructure. On this broad and solid base, which at a height of $1\frac{1}{2}$ foot above high water of ordinary spring tides is 210 feet in diameter, an outer wall, 16 feet high and $14\frac{1}{2}$ feet thick, of granite and roach Portland stone has been built, and provision is made for protecting it with iron plates, should this hereafter be found necessary. Outer Wall.

The foundations and the outer wall in this and the other Spithead works were constructed under the direction of Mr. Hawkshaw, C.E.

We have already stated that we have no sufficient data to enable us to form any confident opinion as to the power of 14 feet 6 inches of granite and stone to resist the heavy projectiles of the present day, but we think it probable that ships would not be able to bring a fire upon this work capable of inflicting serious damage without being themselves disabled by the heavy fire of its powerful artillery, and that it will not, therefore, be necessary to incur the great additional expense which plating it with iron would involve; especially as, even if this outer wall should be penetrated, there would still be another wall to be overcome before the interior of the work could be reached.

Upon the basement it is proposed to place an iron superstructure for 49 guns in two tiers, and preparations will also be made for five turrets to be added hereafter, if sanctioned. The estimate for this iron superstructure is based upon accurate calculations of the quantities of iron of various kinds that will be required for its construction, in order to enable it to offer an adequate resistance to any attack to which it may be exposed; but as the precise arrangement of these materials is not decided on, and as we are not required to give any opinion on that point, we have only to state that the amount estimated would appear to be a sufficient provision for the completion of the work in a satisfactory manner. Superstructure.

The arrangements for the service of the guns and for the supply of ammunition are satisfactory. The work, as far as it has gone, is well and skilfully constructed, as regards permanency and stability, and there have been no failures. Report.

The estimate for this work in the Schedule for 1862 was 260,000*l.*, and in subsequent Schedules it remained at the same amount till 1867, when it was increased to 365,000*l.* The sum expended to the 30th June, 1868, amounted to 115,834*l.*, and a further sum of 308,860*l.* will be required to complete it, thus made up:— Estimate.

	£	£
Expenditure to 30th June, 1868		115,834
Estimated cost of masonry	68,238	
Ironwork for 40 casemates, with intervals of 24 feet 2 inches, at 4,488*l.* each; and 10 casemates with intervals of 26 feet, at 4,860*l.* each	228,120	
Additional work, not included above	6,967	
Arrangement for torpedo wires	2,700	
Proportion of expenses of experiments at Shoeburyness ..	2,835	
		308,860
		£424,694

No Man's Land Fort.

Portsmouth. Design.

32. This work is of a similar construction to that on the Horse Sand, but to obtain a solid foundation, it was necessary to go 20 feet below low water ordinary spring tides, and the cost was thus largely increased.

Estimate.

The estimate for this work in the Schedule for 1862 was 290,000*l.*, and, as in the preceding case, no change was made in the amount till 1867, when it was increased to 406,000*l.*

The amount expended to June 30th, 1868, was 152,937*l.*

The amount required for completion, varying only in some small details from that at the Horse Sand, is 309,563*l.*, and the total cost will thus amount to 462,500*l.*

Spit Bank Fort.

Design.

33. The foundations for this work are similar to those for the Horse Sand Fort. The external diameter of the masonry base at high water level is 151 feet.

It is designed for 15 guns in one tier, nine in an iron superstructure occupying rather more than half the circumference looking seaward, and six in granite casemates towards the land and Portsmouth Harbour. Preparations are also made for two turrets.

Report.

The work is well and solidly built, and there have been no failures; the arrangements for the service of the guns and for the supply of ammunition are good and satisfactory.

It has already been stated that the Defence Commissioners recommended a work on the Sturbridge Shoal, that provision was made for it in the Schedule of 1862, and that the work on the Spit Bank, recommended by them, was given up. All attempts to obtain a secure foundation on the Sturbridge having failed, it was decided to substitute two smaller works on the Spit and Ryde Sands. The same difficulty in obtaining a secure foundation led to the abandonment of the position on the Ryde Sand, and the work on the Spit Bank is alone in course of construction. The attempts alluded to involved an expenditure of 10,074*l.* under the Loan, and 2,310*l.* out of annual votes, and this amount has been added to the expenditure on this item of the Schedule, though it cannot be considered as any part of the cost of the work on the Spit Bank.

Estimate.

The amount inserted in the Schedule of 1862 for the Sturbridge work was 306,000*l.* This sum was increased in 1863 to 310,000*l.*; the Sturbridge work was omitted from the Schedule of the Act of 1864, but the same amount was retained for "other Spithead works" till 1867, when it was reduced to 293,000*l.* at the same time that the amount for St. Helen's and Puckpool was increased; this estimate was intended to provide for two works on the Spit Bank and Ryde Sand; the latter, for the reasons given above, was afterwards abandoned.

The account will then stand thus:—

	£	£
Expenditure on Spit Bank to June 30th, 1868		45,101
Further sum for foundations	23,249	
To complete masonry	47,365	
To complete iron:—		
Seven casemates of 25 feet intervals, at 4,643*l.*; two ditto of 29 feet, at 5,387*l.*	43,275	
Proportion of Shoebury experiments	510	
		114,399
		159,500
Estimated cost of shields		7,800
Estimated total cost of work		167,300
Expenditure at Sturbridge, &c.		12,384
		£179,684

St. Helen's Fort.

Design.

34. This fort is placed on the outer edge of the shoal, where the sand is nearly uncovered at low water spring tides. The foundations for the work are formed by a ring of iron caissons sunk to an average depth of 25 feet 6 inches below the surface of the shoal, passing through sand and shingle, and 5 feet into the clay. Within this ring the sand has been dredged out, and the space thus excavated filled with concrete; this bed of concrete is 10 feet thick, and its surface is 2 feet above low water of ordinary spring tides.

The outer wall of the basement is completed. The superstructure will be of iron on the outer half of the fort where exposed to fire from ships, and of granite towards the land; it will be armed with six heavy guns to seaward, and four lighter guns behind shields on the land face. PORTSMOUTH.

It is well-designed as to permanency and stability, and the arrangements for the service of the guns are satisfactory. The calculations of the probable cost of the iron walls are based on the same data as those for the other Spithead forts, and the remarks on the Horse Sand Fort apply equally to this work. Report.

This work was not contemplated in 1862, but in the Schedule for that year the sum of 87,000*l.* was inserted for batteries at Puckpool and St. Helen's Point. In 1863 it was decided to substitute a work on the shoal for that on shore, and the same amount was retained in subsequent Schedules, till 1867, when it was increased to 145,000*l.* The sum expended to the 30th June, 1868, amounted to 47,779*l.* The further sum required amounts to 70,332*l.*, that is, for the masonry 41,358*l.*, and for the iron 28,974*l.*, making the estimateof the total cost of the work, when completed, without shields, 118,111*l.*; and including four shields, estimated at 5,200*l.*, 123,311*l.* Estimate.

Puckpool Battery.

35. This is a powerful mortar battery on the north-eastern shore of the Isle of Wight bearing, though at long range, on the approach to Spithead and the southern part of that anchorage. Design.

It was commenced in 1863, and completed in March 1865 for an armament of 21 mortars, with space on the ramparts for 11 light guns. In 1867 it was modified and altered for an armament of 38 mortars in a double line, and five guns. In 1868, when the failure to obtain a foundation either on the Sturbridge or Ryde Sand made it necessary to abandon the attempt to construct a work in either of those positions, it was decided to increase the power of the guns in this work, and again to modify it by reducing the number of mortars from 38 to 30, and to substitute 25-ton guns for four of the lighter guns formerly proposed; the fifth gun for flank defence will be a 7-inch breech-loading gun. The merlons have also been strengthened by the introduction of concrete, and two additional expense magazines provided. On the right flank there is a small barrack containing accommodation for four officers and 67 men. It is well supplied with water. Armament. Modification.

The work has been skilfully constructed. The arrangements for the service of the guns, and for the storing and supply of ammunition, are good. Report.

The sum expended to the 30th June, 1868, amounted to 16,840*l.*, and the further sum required to complete is estimated at 4,024*l.*, making a total of 20,864*l.* To this must be added, before the battery would be ready for occupation, a further estimated expenditure of 8,100*l.* for shields, making a total of 28,964*l.* Estimate.

In 1867, the total cost of the two works at St. Helen's and Puckpool, when no shields were proposed for Puckpool, was estimated at 145,000*l.*, the cost, including shields, is now estimated at 152,275*l.*

An alternative plan has been laid before us for dispensing with the iron shields at Puckpool and substituting guns mounted on Moncrieff carriages. The cost of the alteration would be 2,824*l.*; the whole cost of this work would be reduced from 28,964*l.* to 23,688*l.*; and of the two together to 146,999*l.* Alternative plan.

We will not here further allude to the financial effects of the adoption of the Moncrieff system, since in the Appendix will be found a tabular statement, giving in each case a full account of what the effect of the change will be.

SEA DEFENCES.—INNER LINE.

Gilkicker Battery.

36. This work was begun in June 1863, under a contract for the basement. In November of the same year, the contractor failed, and the work was stopped. In June 1865, it was re-commenced, under a fresh contract, has been carried on steadily since, and is now approaching completion.

Portsmouth.

Design. It is designed as a casemated granite work, mounting 22 guns behind iron shields, with 5 guns also protected by shields on the roof, and will contain barrack accommodation for five officers, four serjeants, and 98 men on a peace establishment.

Report. There have been no failures of any sort, and the work is skilfully built, both for permanency and for resisting power.

Magazine accommodation. The disposition of the shell stores and magazines in the basement is good, but the passages by which the shells are conveyed from the stores to the lifts are only 4 feet, and in some places 3 feet 6 inches wide, scarcely allowing two men to pass each other with trucks, and making it difficult, if not impossible, to supply the shells with sufficient rapidity from the basement alone.

A record of a trial of two guns in this battery will be found in the Appendix, No. V.; and in another part of this Report we have pointed out the measures which we think necessary to give full efficiency to the heavy guns in casemated batteries.

In the design laid before us it is proposed to cut through the rear wall of the casemates, for the purpose of passing the lamps for lighting the magazines and shell stores from the outside into the light boxes, without carrying them through the shell passage. The considerable expense of this alteration might, in our opinion, be saved, by allowing the light boxes to open directly into the shell passage, as we see no objection to the lights being inserted in their places from that passage.

Mortar Battery. A design has also been laid before us for an auxiliary mortar battery, on the left flank of the fort, to be prepared for 16 mortars. This design has not been finally approved. It appears to be well calculated for its object, and is estimated to cost 8,800*l.*

Estimate. The original estimate for Gilkicker Fort, in 1862, was 50,000*l.*, and this in 1867 was increased to 58,000*l.* The additional cost of the shields was then estimated at 30,000*l.*, but no provision was made for a mortar battery. The amount expended to the 30th June was 45,984*l.*, the further sum required is 15,411*l.*, making a total of 61,395*l.* To this must be added 38,725*l.*, for providing iron shields, bringing up the total cost to 100,120*l.*, and with the mortar battery to 108,920*l.*

Southsea Castle.

Design. **37.** The works undertaken here under the Defence Loan consisted of auxiliary batteries connected with the Old Castle, the whole closed by a gorge wall, loopholed for flanking fire.

Armament. The batteries are constructed for 32 guns—one rifled 13·3-inch gun on the left flank of the West Battery; 22 rifled guns, of 9 or 10-inch; nine 7-inch guns for flank defence; and four mortars. The battery is partially armed. The position selected for

Mortar Battery. the mortars behind the Castle appears to us to be objectionable, and we recommend a revision of this part of the plan. This will involve no additional expense, as the work has not been commenced.

Modifications. At the time of our visit, the protection to the guns and magazines appeared to be insufficient to withstand the heavy projectiles of the present day, and a plan has since been sanctioned for giving increased strength to the parapets. A plan has also been laid before us, in which it is proposed to dispense with the iron shields, to substitute the Moncrieff system in that portion of the battery intended for heavy guns, and to increase still further the strength of the parapet.

Report. The magazines for the 7-inch guns might be exposed to a dropping shot from an enfilade fire, making a different arrangement and additional protection necessary. The design has been amended in this respect, and the cost of the alteration included in the estimate. The magazine accommodation will then be good and well-arranged. The arrangements for the supply of ammunition to the guns are not yet finally settled, awaiting the result of further experience with heavy guns. For the 23-ton gun some special provision will be necessary for the conveyance of its heavy shells from the magazine below.

The auxiliary batteries were begun in March 1863, and are complete, with the exception of the shields for embrasures. They have been well constructed.

Castle. In the Castle there is accommodation for three officers and 63 men. The old magazine in its basement is ill-lighted and ill-ventilated, and the want of ventilation is the more felt from the latrines being in its immediate neighbourhood. There is a project for mounting three of the heaviest guns and four mortars on the top of the Castle, but this has not yet been sanctioned. Should it be adopted, the opportunity should be taken to revise the magazine arrangements.

The amount expended to the 30th June was 29,394*l.* The further sum required to carry out the improvements mentioned above is 11,460*l.*, making a total of 40,854*l.* To this must be added the sum of 35,025*l.* for shields, making a total of 75,879*l.* PORTSMOUTH. Estimate.

Should the Moncrieff system be adopted, there would be an additional cost in preparing for it of 6,862*l.*, but the total cost of the battery on that system would be reduced to 47,716*l.* Alternative.

EASTNEY BATTERIES.

38. The Eastney Work consists of two batteries, connected by a parapet, in front of the barracks of the Royal Marine Artillery. They are intended to command the approach to Langston Harbour and the water to the eastward of the Horse Fort. Design.

The face of each battery, and of the connecting parapet, is covered by a dry ditch, and the gorge is closed by a loopholed wall 3 feet thick. Each battery has 10 embrasures, and two guns *en barbette*, and is now armed with five 7-inch breech-loading guns, and seven 8-inch smooth-bore guns. The magazine accommodation is sufficient, but the provision for artillery stores is scarcely adequate. Armament.

As these batteries are at a great distance from the channel leading into Spithead, and have a large extent of shoal water in front of them, they could take but little part in an engagement with large ships, and their present armament seems to be sufficient to keep small vessels or boats at a distance. For this purpose they have been skilfully constructed. They were commenced in June 1861, and completed in March 1863, for the sum of 17,435*l.*, and no further expenditure is required upon them. Estimate.

LUMPS BATTERY.

39. This work has 14 guns in embrasures, and three *en barbette*. It is armed with 68-pounders, 8-inch guns, and breech-loading 7-inch rifled guns. It is surrounded by a ditch, into which the water can be admitted, but as the ditch will not retain the water, it is at present an imperfect obstacle to an assaulting party, and although protected by the flanking fire of three caponnières, some measure seems to be necessary to improve it, which might however be deferred till a time of expected attack. Design. Armament.

The work was begun in November 1859, and completed in October 1861. It is well constructed, and except the defect mentioned above, well adapted to its object—that of preventing a landing between Eastney and Southsea Castle. The magazine accommodation is ample, and well protected. The work is supplied with water by the Southsea Water Company. Report.

The cost of this work was 18,945*l.*; of that sum 14,726*l.* were charged to the Annual Estimates; and the expenditure, under the Loan, amounted only to 4,219*l.* No further expenditure is required. Estimate.

In the Schedule of 1862 provision was made, exclusive of land, of a sum for Southsea Castle of 35,000*l.*; for Eastney, 15,000*l.*; and for Lumps, 5,000*l.*: in all, 55,000*l.* This, in 1867, was increased to 60,000*l.* for the works, and 30,000*l.* for the shields, making the total estimate 90,000*l.*

The estimated expenditure under the Loan on the three works, exclusive of shields, amounts to 60,998*l.*, and with the shields, to 96,023*l.*

SUMMARY.

40. The total amount estimated by the Defence Commissioners to be required for the defence of Spithead, including the purchase of land, was 1,100,000*l.* The amount expended out of the Annual Votes was 17,036*l.* The estimate for the works contemplated in 1862 was, exclusive of land, 1,048,000*l.*; in 1867, the great power developed in rifled guns having made a large increase of resisting power necessary in these forts, the estimate was increased to 1,327,000*l.*, exclusive of the iron shields for Southsea and Gilkicker, and with those shields to 1,387,000*l.* The cost of completing the works without shields is now estimated at 1,328,446*l.*, and the cost of the shields at 94,850*l.*, making with the previous expenditure a total of 1,440,332*l.*, of which 1,421,786*l.* will be charged against the Loan.

The abandonment of the work on the Ryde Sand has led to a saving of 115,626*l.* on the item of 293,000*l.* in the estimate of 1867 for the Spit Bank Fort and other works; by this saving the great increase since 1862 in the estimated cost of the other Spithead works has been partly met, yet it will be seen that the increased estimate of 1867 still falls short of their present estimated cost by 34,786*l.*

Portsmouth.

Of this excess 6,200*l.* has been caused by the provision of means for combining submarine defences with the forts; 13,500*l.* has been caused by the necessity of adding to the thickness of the shields, and a sum of 82,273*l.*, being 22 per cent. on the iron superstructure of the two forts at Horse Sand and No Man's Land, is to be attributed to the strengthening of the iron work consequent on the experiments made at Shoeburyness in 1868.

If the Moncrieff system be adopted, there will be an excess on the total estimate of 1867 of 1,347*l.* The works in our opinion have been constructed with great skill, and with due regard to economy; and their increased cost is to be attributed to the causes we have mentioned above.

NEEDLES PASSAGE DEFENCES.

Hurst Castle.

Design.

41. This powerful work, embracing the old Castle, and extending on each side of it, consists of 61 casemates in which the guns are to be protected by iron shields, 37 to the westward of the Castle, and 24 to the eastward. The original design also provided a barbette battery on the roof. This part of the design has been given up, and it is now proposed to place on the roof three turrets for six guns, or four guns on the Moncrieff system.

Magazines.

There is no basement accommodation except in the Old Castle, which contains a large magazine. The plans for the magazines have undergone considerable alteration and improvement. The present arrangement provides four new main magazines and shell stores, two in each battery, in addition to the large reserve magazines in the Keep. There are also seven expense magazines and seven shell stores in rear of the casemates, to be supplied from the main magazines by a verandah passage. These seven magazines will have to supply the 61 heavy guns in the casemates, or from eight to nine guns each; and considering that, except a few guns on the flanks, the guns will be 10-inch rifled guns, it would seem too much to expect that a sufficient supply of ammunition could be kept up from them during a hot action with ships. We therefore recommend that the whole of the space now divided between powder and shells should be appropriated to powder alone, and that some simple arrangement should be made for a deposit of shells, for immediate use, in rear of each casemate, where they would not be exposed to direct fire, or to the impact of heavy fragments of shells bursting near them, to be supplied as required from the main shell stores. We also recommended that the floor of the verandah, which is now on a somewhat lower level than the floor of the casemates, should be raised to the same height, so as to facilitate the passage into the casemates of trucks with heavy cartridges or shells; this modification has now been introduced in the approved plan. Separate magazines and shell stores will be provided for the turrets, or Moncrieff guns, on the roof. The old magazines in the Keep are spacious. At the time of our visit we observed that they were ill-ventilated, and that the floors were so much affected by dry-rot that it was necessary to take them up. Plans have now been laid before us for improving the ventilation, and the cost of doing so is included in the estimate for completion.

Recommendations.

The rear of the work is closed by a massive wall, to which additional strength has been given, where it is exposed to fire from either flank.

Report.

The new batteries are well and solidly built. The foundations are protected in front by a large bed of shingle, varying much in quantity, as it is thrown up or washed away by the sea. The tendency, for the last three or four years, has been towards an increase, and there seems no reason to fear that the stability of the foundations will ever be affected by the action of the waves.

The first contract was in February 1861, for the foundations, which were satisfactorily completed in March 1862. The next contract was for the battery, some rear buildings, rear wall, and bridges, with some alterations in the Castle, and a new lighthouse and light-keeper's dwelling, for a sum of 68,875*l.* When this sum had been expended, a further contract, under which the work is now approaching completion, was made with the same contractor at an advance of 15 per cent. on the schedule of prices in his former contract.

The estimate in the Schedule of 1862 was 108,000*l.*; in 1867 it was increased to 110,000*l.*, and 61,000*l.* was added for shields, making a total estimate of 171,000*l.* PORTSMOUTH. Estimate.

The total amount expended to the 30th June, 1868, was 97,832*l.*, and a further sum of 22,989*l.* will be required to complete the work, exclusive of turrets and iron shields, making a total of 120,821*l.* The cost of shields to be added is estimated at 88,450*l.*, making the total cost 209,271*l.*, and with turrets 269,271*l.*

Should the four Moncrieff guns be sanctioned instead of the turrets, the additional cost of the work would be 8,302*l.* and the total cost of the work, with this addition, would be 217,573*l.*, instead of 269,271*l.* In the Appendix will be found a comparative statement of the cost of the two plans.

ISLE OF WIGHT DEFENCES.

Needles Battery.

42. This is a barbette battery built on the projecting point of the chalk ridge above the Needles Rocks, at an elevation of 254 feet above the sea.* It commands the narrow channel between the Needles Rocks and the Shingles, the edge of that shoal being distant a little more than 2,000 yards, so that ships passing would be exposed to a plunging fire upon their decks, while the height of the battery above the sea protects it from any serious attack from shipping. Design.

It is designed for 6 guns, and is at present armed with 7-inch breech-loading guns, which it is proposed to replace at a future time with heavier guns. The gorge is closed and protected by a ditch, cut in the chalk, across the narrow ridge on which the work stands. It contains barracks for one officer, two non-commissioned officers, and 21 men. Armament.

The battery was commenced in September 1861, and completed in June 1863. In 1865, the facing of the escarp bulged slightly, but so little as to need no repair, and there has been no further movement. Water is supplied from rain-water tanks, having a capacity of 10,400 gallons. There is sufficient magazine and store accommodation, and the work has been well and skilfully constructed. Report.

The estimate in the Schedule of 1862 was 7,000*l.*, exclusive of land. The expenditure to the 30th June, 1868, amounted to 6,958*l.*, and a further sum of 698*l.* will be required to adapt it for a heavier armament, making the total cost 7,656*l.* This additional sum will be charged to the Annual Estimates. Estimate.

Hatherwood Battery.

43. This is also a barbette battery placed on a point on the north-east side of Alum Bay, at the same height above the sea as the Needles Battery, with which it crosses its fire on the Needles Passage. Design.

It was commenced in 1865, and is finished, with the exception of some small details and the modifications required to adapt it for guns heavier than those originally contemplated. It is now intended for an armament of four 9-inch guns and three 7-inch. It is sufficiently supplied with water from a well. Barrack accommodation for two officers and 50 men was provided in the original design, but this has been omitted, and the only provision is now a small building in the rear, adapted for two married soldiers. It has been well and skilfully constructed, and there have been no failures. The store and magazine arrangements are good. Armament. Report.

The estimated cost in the original Schedule amounted to 4,000*l.* The expenditure to the 30th June, 1868, amounted to 4,581*l.*, and a further sum of 1,244*l.* is required to complete it, making the total estimated cost 5,825*l.* Estimate.

Warden Point Battery.

44. This work was commenced in 1862, and finished in June 1863.

To secure the cliff, and to prevent the bank from slipping, the slope and back of the hill were drained, under the direction of Mr. Parkes, C.E., and a sea wall was built along the shore to resist the action of the sea. On the representation of the Commanding Royal Engineer, the foundations of this wall were carried deeper than originally designed; the total height was increased from 9½ to 12½ feet, and the length from 900 Sea Wall and Drainage.

* Unless otherwise specially stated, all the heights of works as given in this Report, refer to the highest point of the crest of their parapets, the altitude of which is given above mean tide level.

Portsmouth.

to 1,100 feet; the toe was in part further protected by an apron of Purbeck pitching, with sheet piles in front. The drainage extended over the whole site, comprising an area of 23 acres.

It is scarcely to be expected that the action of the sea and of the rain will be entirely arrested by these precautionary measures, and it is probable that some expenditure will be necessary from time to time to prevent injury to the work, but we have not thought it necessary to include any additional sum for this purpose, since any measures that may be required hereafter would be more properly charged to the maintenance than to the completion of the work.

Design. Armament.

The work is enclosed, and will mount eight 12-ton 9-inch guns *en barbette*, 105 feet above the sea. It is about 2,500 yards to the eastward of Hatherwood, and about the same distance from Hurst Castle on the opposite side of the channel.

Report.

The work has been well and skilfully constructed. The magazine accommodation is sufficient, and it is well-protected. There have been some complaints of dampness; this does not appear to have been caused by defective drainage, but rather by the admission of the damp external air to the cold internal walls. The arrangements for the artillery stores are not altogether satisfactory, but a different disposition of the available spaces would remedy the inconvenience without the necessity of incurring any additional expense.

The original design provided the same barrack accommodation as at Hatherwood, and this, with the exception of a small guard-room, has also been omitted here.

Estimate.

The estimated cost of this work in the Schedule of 1862 amounted to 9,000*l.*, exclusive of land, but in the Schedule of 1867 10,000*l.* was added to the total for this group of works, to meet part of the largely increased expenditure found to be necessary here and at Cliff End. The payments to the 30th June, 1868, amounted to 11,746*l.*, the further sum required to complete is 1,153*l.*, making the total estimated cost 12,899*l.*

Cliff End.

45. The site selected for the Cliff End Battery extends along the brow of the hill above the old Cliff End Fort and Fort Victoria; the battery will be about 1,800 yards from Warden Point, and nearly the same distance from Hurst Castle, opposite to it, and will co-operate with these various works in the defence of the channel at its narrowest point.

Drainage of Site.

To prepare the site, the whole ridge, with the slopes on each side, chiefly composed of a slippery clay, have been drained under the superintendence of Mr. Parkes, C.E.

The object of the drainage has been to carry off all the water that can fall upon the surface or find its way into the hill beneath the site of the fort, and thus give stability to the soil; as far as it has gone the operation we are told has been successful, but till the result of that drainage has been more fully ascertained, we consider that the construction of the fort had better be postponed. To protect the toe of the cliff, a sea wall has been built, which seems likely to accomplish its object, though it is possible that some further protection to it from the scouring power of the sea may be necessary. Under any circumstances, it is probable that some expenditure will be required here as at Warden Point, from time to time, to maintain the slope in a secure condition.

Sea Wall.

Design. Armament.

Plans have been laid before the Committee for the construction of a work to comprise two batteries—one on the right for eight guns, *en barbette*, 129 feet above the sea; the other on the left for 12 guns, at heights varying from 90 to 115 feet. The proposed arrangements for the service of the guns, the supply of ammunition, and for artillery stores, are good and satisfactory. The project appears to be well devised to meet the requirements of this important position.

Report.

Estimate.

The amount estimated in 1862 for this work, exclusive of land, was 30,000*l.*

The sum expended to 30th June, 1868, on the sea wall and drainage, to prepare the site, amounts to 18,129*l.* The estimated sum required to complete the proposed work as a barbette battery is 14,585*l.*, making a total sum of 32,714*l.*

An alternative plan for adapting the left battery to the Moncrieff system has been prepared, and the additional sum required for it is 2,700*l.*, making a total of 35,414*l.*

Golden Hill Barrack.

Site and Object.

46. This work is placed on an eminence to the west of the valley of the Yare, about midway between Yarmouth and Freshwater. It is intended to be a defensible barrack and keep to the batteries for the defence of the Needles Passage.

Design.

It was originally designed as a much larger work with the same barrack accommodation as that with which it has now been constructed, intended for 250 officers

and men, but reduced by modern requirements to that for eight officers, 128 men, a hospital staff, and 14 patients. The excavations for the work were commenced in 1863. PORTSMOUTH.

The work is hexagonal with a ditch, and scarps 31 feet high, covered by a raised glacis, and designed for 18 light guns. The ditch is flanked by musketry caponnières at the alternate angles. The entrance to the work is through a tunnel in the glacis and over a drawbridge. The parapets, 9 feet thick, were originally constructed with an exterior slope of one to one, without berms, of blue slipper clay, imperfectly drained, resting on a bed of concrete and asphalte, covering the arches, and sloping outwards 1 inch in 4 feet. After heavy rains in January 1868, the clay, becoming saturated with water, slipped into the ditch on four sides of the work. These slopes were repaired by inserting a toe of concrete in Medina cement at the foot of the exterior slope, and 2-inch agricultural pipes to carry off the water, and putting in layers of clay and burnt ballast, revetting the whole with sods. The cost of this repair was 177*l.* Armament. Failures.

The counterscarp, at a slope of $1\frac{1}{2}$ to 1, formed also chiefly of the same blue clay, slipped in November 1864, and by the summer of 1866 the slip had extended to nearly three-fourths of the whole length. The remedies adopted were thorough drainage, driving in fir poles, interweaving them with brushwood, and filling up with alternate layers of blue and burnt clay. These repairs were finished in August 1867. The cost of the repair was 1,751*l.* There has been lately some further slight subsidence in the counterscarp, and it is probable that to maintain the work some small expenditure may be necessary from time to time. Repairs.

This work, though not calculated to resist the attack of a strong force with artillery, provides a defensible barrack for partly manning the Needles Batteries, and a central point of support to troops opposing an enemy who may have landed.

With the exception of the slight failures pointed out, it has been well constructed as regards permanency and stability, and the arrangements for the service of the guns are satisfactory. Report.

The estimate for this work in the Schedule of 1862 was 30,000*l.* Estimate.

The sum expended to the 30th June, 1868, amounted to 32,476*l.*; the sum required for completion is 5,546*l.*; making the total 38,022*l.*

SUMMARY.

47. In the Schedule of 1862 the amount estimated for the works on the Isle of Wight for the defence of the Needles amounted to 80,000*l.*, exclusive of land; and this in 1867 was increased to 90,000*l.* Summary. Needles.

The estimated cost is now 97,116*l.*; of this sum 698*l.* will be charged to the Annual Estimates, leaving 96,418*l.* chargeable to the Loan.

48. The total sum required for the defences of the Needles, including Hurst Castle, was estimated by the Commissioners at 150,000*l.*, including the purchase of land. Needles and Hurst Castle.

The amount paid for land has been 22,757*l.* The estimated cost of the works in 1862 was 188,000*l.* exclusive of land. This in 1867 was increased to 200,000*l.*, and 61,000*l.* were added for shields. The cost is now estimated at 217,937*l.* for the works, and 88,450*l.* for shields, making a total of 306,387*l.*, of which 305,689*l.* will be charged to the Loan.

The increase on the estimate of the Commissioners, in the first Schedule of 1862, is chiefly to be attributed to the much greater development of the Hurst Castle Batteries beyond that contemplated by them. The subsequent increase is chiefly due to the increased cost of labour and materials, to the drainage at Cliff End and Warden Point, and to the necessity of adding strength to the iron shields.

ISLE OF WIGHT COAST DEFENCES.

BEMBRIDGE FORT.

49. THIS work, built on Bembridge Down, forms a keep to the coast batteries in Sandown Bay, and occupies the heights commanding the space between Brading Haven and the sea. It is to be armed with six 7-inch breech-loading guns, and there is space on the ramparts for four more. It is well supplied with water. Design. Armament.

Portsmouth.

Alteration.

The work was commenced in May 1862, and completed in July 1867. There have been no failures, but there have been some alterations from the original design in the substitution of single for double caponnières, and in the more complete revetment of the escarp and counterscarp. There is barrack accommodation for 4 officers and 106 men.

On our visit there appeared to be a want of sufficient protection to the expense magazines and to the inner wall of the main magazine. In the plan now laid before us this defect has been remedied, and some minor details altered, and the cost of the alterations is included in the estimate.

Report.

The work is well and skilfully built, as to permanency and stability, and is well adapted to the position it occupies. The magazine arrangements will be satisfactory, as well as the provision for the service of the guns.

Estimate.

The sum expended to the 30th June amounted to 44,362*l.*, and the further sum required to carry out the proposed improvements, and to complete the fort, is 2,423*l.*, making a total of 46,785*l.*, of which it is proposed to charge 2,207*l.* to the Annual Estimates, leaving the charge against the Loan 44,578*l.*

Redcliff Battery.

Design.

50. This work is built close to the edge of the cliff, a little to the west of Culver Cliff, about 1,000 yards to the east of Yaverland Battery, and 150 feet above the sea. Like the other works in the neighbourhood, it was begun in April 1861, and completed in September 1863. It is armed with four 7-inch breech-loading guns, and has ample

Armament.

magazine accommodation; the gorge is closed by a loopholed wall and a shallow ditch, flanked by caponnières. There is no barrack accommodation, except a small

Report.

guard-room. The battery is well devised for its object,—that of assisting Yaverland and Sandown Fort in preventing a landing in the bay. On the left flank of the work part of the cliff began to give way in 1867, and in August 1868 fell into the sea.

Land slip.

This slip appears rather to be owing to the action of the land springs than to that of the sea, and though the Commanding Royal Engineer has expressed an opinion that no further slip may be expected for a considerable time, it is probable that the stability of a portion of the parapet is likely to be affected at no very distant period.

Remarks.

The formation of the ground, near the position selected, would not have admitted of its being placed further from the edge of the cliff without largely increasing the cost. The measures required to secure it would be difficult and very expensive, and we do not recommend that they should be undertaken, but that any failure should be dealt with when it occurs, by moving the parapet back as much as the confined space in the work will allow.

Cost.

The sum expended to June 30th, 1868, was 4,776*l.*, and no further sum is required to complete it.

Yaverland Battery.

Design.

51. This work is built on a knoll or spur from the Downs, about 1,800 yards to the east of Sandown Battery, at an elevation of 108 feet above the sea. It is armed with eight

Armament.

7-inch breech-loading guns, is well provided with magazine accommodation, and is enclosed by a ditch and loop-holed wall flanked by musketry.

Report.

It was commenced in April 1861, and completed in September 1863. In the winter of 1863 the counterscarp, although the slope originally designed at 1 to 1 had been increased to 1½ to 1, gave way on the sea face. The face of the cliff, and this part of the counterscarp, were in consequence drained, and a sea-wall was built. These measures were completed in 1864, and there have been no failures since. The formation of the ground in this case admitted of the work being thrown back, so as to give room for a ditch and glacis between it and the sea. The gorge is closed by a wall and barrack, and the ditch is protected by a Carnot wall, and flanked by caponnières.

The barrack contains accommodation for 2 officers and 57 men, and is supplied with water from the Water Company, and has a rain-water tank having a capacity for 4,000 gallons.

Cost.

It is well and skilfully constructed, both as regards stability and its powers of resistance. It has cost 20,500*l.*, and no further expenditure is required.

Sandown Fort.

Design.

52. This is a granite fort for 18 guns in casemates behind iron shields, and 10 guns

Armament.

on the terreplein above; it stands close to the beach near the centre of the bay. It was begun in April 1861, and brought to its present state of forwardness in September 1864.

Report.

The main magazine has proved to be extremely damp; the arrangements, designed

originally for a lighter armament, were unsuited to the heavier guns of the present day, and modified plans, with improved drainage and ventilation, have been prepared; additional drainage for the ditch has been recommended on sanitary grounds, and is provided for in the estimates. PORTSMOUTH.

The gorge of this work is enclosed by a wall, and the whole enceinte is surrounded by a ditch, flanked by musketry caponnières.

The fort contains barrack accommodation for 4 officers and 67 non-commissioned officers and men. It has been well and skilfully built as regards permanency and stability, and its power of resistance is well adapted to the position it occupies. It is proposed to adapt the upper battery for the reception of guns on Moncrieff carriages at a cost of 3,090*l.* When the intended improvements are carried out, the arrangements for the service of the guns will be satisfactory.

The sum expended to the 30th June amounted to 41,983*l.*, and the further sum required is 8,493*l.*, making a total of 50,476*l.* The cost of the shields for the 18 guns in casemates is estimated at 23,400*l.*, making the total cost 73,876*l.* Of the additional sum required, 4,945*l.* will be charged to the Annual Estimates, leaving the charge against the Loan, 68,931*l.* Estimate.

SANDOWN BARRACK BATTERY.

53. This battery stands on the edge of the cliff, 140 feet above the sea, and about 1,500 yards to the west of Sandown Fort. It was begun in April 1861, and completed in September 1863. It is armed with five 7-inch breech-loading guns. The arrangements for the service of the guns are sufficient. Design. Armament.

The work is well-built, but the parapet is very close to the edge of the cliff, which is here nearly perpendicular, the foot of it being washed by the sea at high tides, and although the cliff is formed of sounder material than that at Redcliffe, it does not seem improbable that the action of water may in time endanger the stability of the parapet; we do not recommend that any measures should be adopted with a view of averting this danger, as it could only be done at a cost far exceeding its value, and we think it would be better to meet it when necessary, by moving the parapet back as far as the work will admit. Report.

The cost of this work has been 6,233*l.*, and no further expenditure is required. Cost.

MILITARY ROAD.

54. The Defence Commissioners, in their Report, recommend that two towers should be constructed—one near Brook and one at Brixton, with a battery and keep on Atherfield Point, and that a permanent road should be made along the top of the cliffs, between Chale and Compton Grange, a farm between two and three miles east of Freshwater Bay. Design.

The works recommended have been omitted, and a military road alone has been formed between Chale and Freshwater. At the latter place it joined the public road which crosses Freshwater Bay, but the sea having washed away the road, the communication with Freshwater is cut off. As the maintenance of this road devolves on the people of the neighbourhood, and as in case of emergency a temporary communication between Freshwater and the military road might be easily made, we do not recommend that any expenditure should be incurred by the Government in restoring the communication. The estimate for the military road and posts for defence of the sea coast, in the Schedule of 1862, was 35,000*l.*, at which amount it remained until grouped, in 1865, with the other works for the defence of the South Coast of the Isle of Wight. The sum expended on the road amounts to 16,728*l.*, and no further expenditure is required, showing a saving of 18,272*l.* consequent on the omission of the works above referred to. Report. Estimate.

SUMMARY.

55. The cost of the Isle of Wight coast defences, including the purchase of land, was estimated by the Defence Commissioners at 130,000*l.* Isle of Wight Coast Defences. Estimate.

The same amount of 130,000*l.* was inserted in the Schedule of 1862, exclusive of land. In 1864 the estimate was increased to 140,000*l.*, and in 1867 to 145,000*l.*, and 18,000*l.* for shields; making the total estimate under the Loan, 163,000*l.*

The cost of this group, as now estimated, exclusive of land, for which 34,745*l.* have been paid, will amount to 145,498*l.*, and 23,400*l.* for shields, making a total of 168,898; of this sum 7,152*l.* will be charged to the Annual Estimates, and 161,746*l.* to the Loan.

LAND DEFENCES.—OUTER LINE.

PORTSDOWN HILL.

Occupation of Site.

56. The Portsdown Hill position, six miles in extent, is occupied by five works, viz: Fort Purbrook with its two outworks on the east, Fort Widley, Fort Southwick, Fort Nelson, and Fort Wallington on the west.

In addition to these works the Defence Commissioners recommended the construction of three intermediate works; considering the distance between the forts as now constructed, and the nature of the ground between them, it would undoubtedly be necessary for the defence of the line that those intermediate points should be occupied whenever it may be necessary to place it in a state of defence.

Centre of Position.

The two central works, Forts Southwick and Widley, as nearly as possible identical in design, are respectively 400 and 325 feet above the sea, and are distant from each other 3,100 yards. The ground in the immediate front of Fort Southwick slopes at an inclination of 1 in 8 for a distance of 400 yards, and from thence more and more gradually to the bottom of the valley, part of which is occupied by the fish-pond of Southwick Park, an artificial piece of water about half a mile in length, formed by damming the stream which drains the valley. The front of Widley, and the northern slope of the hill between these works, is of the same character as that just described, and presents no remarkable features, there being very few spots on the belt, a mile in width, in front of the works, which are not seen by one or both of them.

Right of Position.

The right of the position is occupied by Fort Purbrook, at a distance of 2,200 yards from Fort Widley. Beyond Fort Purbrook, Portsdown Hill falls towards the village of Bedhampton, and on the termination of the ridge, 800 yards to the east of Fort Purbrook, is an outwork called Farlington Redoubt, open in the gorge to the fort, and commanding some slopes unseen by it. The Defence Commissioners also recommended that from this point to Langston Harbour lines should be formed to protect the flank of the position from an enemy advancing from the eastward.

The southern extremity of this line was to have been occupied by a strong work on a site which has been acquired by the War Department for that object, in front of the east reservoir of the Farlington Waterworks. It is not at present contemplated to construct this work, or the connecting line, but it would undoubtedly be advisable to occupy the ground, whenever it becomes necessary to place Portsmouth in a state of defence.

Fort Purbrook has another outwork on the northern slope of the hill at Crookhorn, designed with a view of commanding ground which is unseen from the main work. It is situated 300 yards in front of the work, and 75 feet below it.

Left of Position.

2,200 yards to the left of Fort Southwick, on the termination of the main ridge of the hill, at an elevation of 275 feet (125 feet below Southwick), is placed Fort Nelson.

The Commissioners also recommended that lines should be made to connect Fort Nelson with the head of Fareham Lake, but this part of the scheme has been abandoned.

Fort Wallington, the work on the extreme left of the line, is 1,800 yards distant from Fort Nelson, and is placed on a spur 100 feet above the sea, overlooking the valley of the Wallington River, which here forms a semicircular bend to the westward. The importance of this position has been much enhanced by the abandonment of the lines between Fareham Lake and Fort Nelson; while the proximity of the villages of Fareham and Wallington, the irregular features in the neighbourhood, and the existence of a hill to the north-west, favourable to the attack, render the detached position of this work difficult to secure. However, the obstacles to a regular attack on its north and west fronts would be very serious.

57. The four works on the right and centre of the Portsdown Hill,—Forts Purbrook, Widley, Southwick, and Nelson,—are very similar in design, and may thus be generally described:—

General Design of Works.

Each fort is surrounded by a ditch 50 feet wide at bottom, cut in chalk. The counterscarp, 32 feet in height, is vertical and unrevetted; the escarp is strengthened by brick piers at intervals, with arches thrown across supporting the wall of the chemin des rondes, which raises the escarp to a total height of 34 to 37 feet. The ditch is flanked by one double and two single caponnières, except at Fort Purbrook which has only one double and one single caponnière. Each caponnière has two tiers of guns, and the minor branches

of the ditch are flanked by musketry galleries. The chemin des rondes is traversed by loop-holed buildings which flank it. The counterslope of the glacis falls without interruption to the top of the counterscarp; the width of the ditch at the top, including this slope, exceeds 60 feet. The main magazine is sunk under the middle of the parade, and is perfectly protected from fire; it is connected with the keep and caponnières by underground galleries. Expense magazines and shell stores are provided in the traverses on the ramparts. There is ample space for the storage of powder and shells, and for the arrangements necessary for the service of the guns. The expense magazines are well protected against vertical fire, but the protection against horizontal fire, in some cases does not exceed 2 feet 3 inches of brickwork, 1 foot of concrete, and 4 feet of earth, and might prove insufficient. It would therefore be necessary to consider the measures that should be taken to place them in a state of security at a time of expected attack. PORTSMOUTH.

Barrack accommodation is provided in each work for about 200 officers and men, and 14 patients; the distribution varies slightly in the different works. Barrack Accommodation.

The armament of each work consists of from 29 to 31 guns on the ramparts, and 5 to 10 mortars. The number of lighter guns for the defence of the flanks and gorge varies from 41 to 62. Armament.

The forts, except Wallington, are all supplied with water from the Farlington Water Works, pumped into reservoirs each capable of holding 84,000 gallons, and laid on to the buildings. Water.

Fort Purbrook and Outworks.

58. This fort is intended for an armament of 29 guns on the ramparts, and 5 mortars, with 62 smaller guns for the defence of the flanks and gorge. Armament.

The gorge wall, which is about 35 feet in height, is flanked by the keep, which projects in the form of a redan.

The outworks at Crookhorn and Farlington were originally designed as enclosed works with masonry scarps and counterscarps, and flanking galleries with bombproof magazines, and with a barrack in the former. The ditches have been already excavated, and it is now proposed to complete these works within them, as positions for 9 and 13 guns respectively, but without flanking galleries, bombproof cover, or magazines. Outworks.

The first contract was commenced in June 1861, and completed in September 1862, at a cost of 31,576*l.* A second contract was begun in March 1865, and under it the fort, not including the outworks or barrack fittings, is now nearly finished. The work still remaining to be done here includes the construction of the two outworks, of which the ditches only have been excavated, and the formation of the slopes in the neighbourhood of the three works. Report.

No failures occurred during the progress of the work, which is well and skilfully constructed as regards permanence, and stability, and its power of resistance both offensive and defensive.

With respect to the outworks, we are of opinion, considering the very advanced position of the work at Farlington, that the total absence of all flanking defence for its ditches, and of bombproof magazines, or shelter of any description, is a very serious diminution in the defensive powers of the east flank of the position, which will be the more felt in consequence of the omission of the lines originally recommended by the Defence Commission, to close the interval between Fort Purbrook and Langston Harbour, and of the detached work afterwards proposed in substitution for those lines.

In 1862, the estimate for these works was 135,000*l.* In 1865, that estimate was merged in the general estimate of 535,000*l.* for the Portsdown Hill Works Estimate.

The sum expended to the 30th June, 1868, amounted to 85,0*o*3*l.*, and the further sum required is 49,339*l.*, making the total estimated cost 134,392*l.*

Fort Widley.

59. Fort Widley is intended for an armament of 29 guns on the ramparts, 10 mortars in casemates, and 41 lighter guns for the defence of the flanks and gorge. The trace of the gorge differs from that of Purbrook. Armament.

This work has been constructed under two contracts: the first for a lump sum of 59,432*l.*, the second on a schedule of prices. It was commenced in October 1861, and is nearly completed. Some slips occurred in front of the east and west demi-caponnières; they were caused by heavy rains falling on the flint masonry before the mortar had set, Report.

Portsmouth. and were repaired at a cost of 248*l*. There have been no other failures, and the work is well and skilfully constructed.

Estimate. In 1862, the estimate for this work was 75,000*l*., and it was also in 1865 included in the general estimate of 535,000*l*.

The sum expended to the 30th June, 1868, amounted to 89,178*l*.; the further sum required to complete is 4,802*l*., and the total estimated cost is 93,980*l*.

Fort Southwick.

Armament. **60**. This fort is almost identical with the last, except that it mounts 31 guns instead of 29 on the ramparts.

Report. It has also been constructed under two similar contracts, and was begun at the same time. An accident occurred to the main magazine, owing to the centres of the arches having been removed too soon, causing an expenditure of 613*l*. for its repair. An attempt was made to obtain water by sinking a well which was carried down to a depth of 275 feet without obtaining an adequate supply of water, and it is like the other forts now supplied from the Farlington Water Works.

The fort is well and skilfully constructed, and there have been no failures.

Estimate. In 1862, the estimate of this work was 85,000*l*., and like the others it was merged in the general estimate of 1865.

The sum expended to June 30th, 1868, amounted to 90,940*l*., the further sum required is 3,322*l*., making a total estimated cost of 94,262*l*.

Fort Nelson.

61. Fort Nelson, in the trace of its gorge, and other features, resembles Fort Purbrook.

Armament. It is intended for an armament of 30 guns on the ramparts, and 9 mortars in casemates, with 48 lighter guns for the defence of the flanks and gorge.

Report. This fort has also been constructed under two contracts, the first for a lump sum of 54,236*l*., the second on a schedule of prices. It was begun in February 1862, and is nearly completed. A slight failure occurred in the retaining wall of the earthwork over the barrack, and was made good at a cost of 539*l*. The work has been skilfully constructed.

Estimate. In the Schedule of 1862, the cost of this work was estimated at 75,000*l*., and it was also included in the general estimate for 1865.

The sum expended to the 30th June, 1868, amounted to 78,649*l*.; the further sum required is 3,477*l*., making a total estimated cost of 82,126*l*.

Fort Wallington.

Difficulties of Site. **62**. Between Fort Nelson and Fort Wallington the ground falls rapidly, and at the point selected for the latter the chalk crops out, and is replaced by a loose clay or marl known locally as "blue slipper," which, when saturated with water, becomes semi-liquid, and is a source of serious difficulties to engineers and builders.

Armament. It is designed for an armament of 17 guns on the ramparts, 6 mortars in casemates, with 28 lighter guns for the defence of the gorge and flanks.

Ditches. The ditch is 33 feet wide at bottom, cut partly in chalk, and partly in loam and "blue slipper."

The counterscarp on the west face is 14 feet high, and the counterslope of the glacis rises 21 feet more at a slope of $1\frac{1}{2}$ to 1; on the other faces it is unrevetted, and will be formed at a slope of 1 to 1. The escarp is 29 feet high, and on the north and east faces is built with two tiers of relieving arches faced by a brick wall 2 feet 3 inches thick. The west escarp was designed as a solid wall of brickwork, averaging 7 feet in thickness. The ditch is flanked by two demi-caponnières, and a double range of counterscarp gun casemates, all of two stories. The gorge wall is 31 feet high, and is flanked by the redan which projects in its centre. The chemin des rondes is flanked by loopholed traverses.

Magazines. There is ample magazine accommodation. The main magazine is under the rampart at the south-east flank, and is well protected against vertical fire. Against horizontal fire it is covered by 17 feet of earth, 1 foot of concrete, and 3 feet of brickwork. The expense magazines in the traverses are similar to those in the other forts, and the same

Barrack Accommodation. alteration to secure them from horizontal fire is desirable. The barrack accommodation is designed for 8 officers, 172 men, 16 hospital patients, and 2 horses. There is a water tank capable of holding 3,850 gallons, and water is laid on to the fort from the reservoir of the Fareham Water Works, which is close to the glacis.

In July 1861, a contract was entered into for the first part of the work, for a sum of 26,000*l.*, and the work was commenced in September 1861; some unimportant deviations from the original design were authorised in the course of execution; and it was completed in March 1865. PORTSMOUTH. Report.

The second portion of the work, executed under a schedule of prices, consisted of the barracks and redan, guard-room and cells, main magazine, gorge ditch, and walls, completion of drainage, &c., except barrack fitments. The water supply was provided under a separate schedule. This portion was completed in September 1867.

The third portion, also executed under a schedule of prices, comprised the completion of the ramparts, parades, and terreplein, building expense magazines, and forming traverses in ramparts.

In June 1867, when the ramparts were nearly finished, the work was interrupted by the symptoms of weakness in the escarp wall on the left face and flank, and the flanking chambers at the north and west caponnières. The wall had begun to bulge forward at the top from the weight of the rampart acting on the blue slipper beneath. The clay at the back of the wall was taken out and the spaces between the counterforts filled in with concrete. The face of the escarp was rebuilt for about 7 feet from the top for a length of 336 feet. Several minor revetment walls showed signs of weakness, and were strengthened in a similar manner. The fourth portion of the work consisted of the making good of the escarp just mentioned, and was finished in March 1868. Failure. Repairs.

With the exception of the failures in revetment walls which we have described, this work has been well and skilfully constructed, with reference to cost, permanence, and stability, and powers of resistance offensive and defensive. The cause of the excess of cost of this work over the others on the Portsdown Line is at once to be found in the nature of the soil, which involved the construction of expensive revetments, and these revetments, although greatly strengthened, proved insufficient to give stability to the masonry in the worst portions of the soil.

In a former part of our Report we have noticed the numerous cases in which the floors of the magazines have become defective, and have stated the measures which we think might be adopted to remedy this defect. Those remarks apply with much force to the main magazines of these works, which, sunk to a great depth in the chalk, offer conditions favourable to the decay of all perishable material. Damp in Magazines.

In the Schedule of 1862, the cost of this work was estimated at 75,000*l.*, and no increase had been made in this estimate before it was merged in the general estimate of 535,000*l.* for the Portsdown Hill Works. Estimate.

The sum expended to the 30th June, 1868, amounted to 91,408*l.*; the further sum is 11,787*l.*, making a total estimated cost of 103,195*l.*

FORT FAREHAM.

63. The Royal Commission recommended an outer line of three forts between Fareham and Lee Farm, on the Solent. Of this line Fort Fareham alone has been constructed, near the town of that name, and 3,500 yards in advance of Fort Elson, which forms the right of the Gosport line of works. It is visible from Fort Wallington, from which it can be seen at a distance of 2,500 yards, but the interposition of the town of Fareham and the river, make it practically an isolated work. Position and Design.

Besides forming the right of the proposed advanced line, Fort Fareham protects the roads and railways which connect the Gosport and Portsdown positions; it secures ground from which the works on the left of that position might be subjected to a reverse fire, and, unless it were captured, disabled, or very effectually masked, the attack of the Gosport Forts would be extremely hazardous.

The first contract was to sink five wells to a depth of 135 feet. This was completed in July 1861, and no water having been found, a fresh contract for sinking them to 200 feet was made, and completed in September of that year. Their total cost was 2,384*l.* The next contract, for the construction of the fort, was commenced in October 1861, and completed in December 1864. Some slight failures took place and were made good at a small cost, and the same contractors made some additions to the work, on a schedule of prices contract. A further contract for fitting up casemates, laying on water, &c., was made in February 1867, and completed in April 1868. Contracts.

The work is situated on a flat site, on a clay soil, 40 feet above mean tide level. The ditch, which is at present 60 feet broad at bottom, is intended to be wet. In order to provide the earth necessary for the completion of the work it will be deepened to such an extent by the formation of a cunette that it is expected that the natural drainage, and the supply from the wells (in which the water now rises to a level of 33 feet above mean Site.

Portsmouth.

tide level, or 9 feet above the bottom of the existing ditch) will render unnecessary the provision of an artificial supply which has therefore not been provided for in the estimates.

Armament.

The work is constructed for an armament of 41 guns on its ramparts, of which 19 are in haxo casemates. There will be seven in the redan which flanks the gorge, and 15 in the caponnières which flank the ditches, besides three mortars. The ditches are flanked by one full, and three demi-caponnières, each having one tier of three guns with musketry. The parapets and glacis having subsided considerably during the consolidation of the earthwork, since their formation, a considerable quantity of material is still required to bring them up to the finished levels. This is to be obtained partly from the deepening of the ditch, and partly from the foot of the glacis.

Magazines.

The main magazine, as well as all the expense magazines are under the rampart, there being in the approved plans lifts from the latter to bomb-proof buildings on the terreplein and to the haxo casemates. The storage and supply of ammunition will be safe, commodious, and convenient.

The northern terreplein, and the casemates underneath it, are to be defiladed by a traverse, which will cross the parade, joining the existing parados which covers the gorge wall and the redan thrown forward from its centre.

Barrack Accommodation.

There is barrack accommodation for eight officers, 210 non-commissioned officers and men, five staff serjeants, and eight hospital patients.

Report.

The work, as far as it has gone, is well and skilfully constructed as regards stability and permanency, and when completed according to the approved plans will be suited to the requirements of modern armaments, and when its ditch was filled with water would afford a fair amount of resistance to any attack to which it may be exposed.

Estimate.

The estimate for this work in the Schedule of 1862, was 113,000*l.* In 1863, it was reduced to 90,000*l.*, and in 1865, it was merged in the general estimate of 535,000*l.*

The payments on the work, up to the 30th June, 1868, amounted to 87,291*l.*; the further amount required to complete is 17,276*l.*, and the total estimated cost will be 104,567*l.*

Summary.

Portsdown Position, and Fort Fareham.

64. In their Report the Commissioners estimated the cost of three works for the Gosport advance at 350,000*l.* One of these works only, that at Newgate, now called Fort Fareham, has been constructed, and as the three works were of nearly equal size it may be assumed that Fort Fareham would, in their estimation, have cost 120,000*l.* Their estimate for the works on Portsdown Hill was 650,000*l.*, making the total, including land and Fort Fareham, 770,000*l.* The amount paid for land and clearance rights is 308,700*l.*

In the Schedule of 1862, the cost of these works sanctioned and since constructed or in progress was estimated at 558,000*l.*, exclusive of land. This sum was in 1863 reduced to 535,000*l.*, and it remained at this amount till 1867, when it was increased to 550,000*l.*

The cost as now estimated will amount to 612,522*l.*, or 62,522*l.* in excess of the Estimate of 1867. This excess is thus accounted for by Colonel Jervois:

Ques. 3220.

When the Schedule for 1867 was framed, it was considered advisable to limit the estimate for the Outer Line, which includes the Portsdown Position and Fort Fareham, to what would be absolutely necessary to render the works substantially complete, leaving for future consideration the preparation of the buildings for the reception of troops, and the construction of the Outworks to Fort Purbrook. The estimate for these items now amounts to 42,851*l.* The additions proposed at Fort Fareham and Fort Wallington since 1867 are estimated to cost 13,709*l.* None of these items were included in the estimate of 1867, but are all provided for in the present estimates, and thus an excess of 56,560*l.* is accounted for. The remainder of the excess, about 6,000*l.*, is due to increased expenditure on Forts Wallington and Fareham, not then anticipated.

The deficiency in the Estimate of 1867 is thus explained; but we think it is to be regretted that a fuller explanation of the course decided upon was not made at the time. The Schedules of the various Acts give in the first column the estimated cost of the works under the Loan; that estimated cost would be understood to mean the cost of completing the works up to the point considered necessary in a time of peace, and this in other cases has included the preparation of buildings for the reception of troops. When, therefore, the Government in this instance decided to postpone that preparation and the construction of the Outworks at Purbrook, some notice of that decision would appear to have been required to prevent the erroneous impression that would otherwise be created as to the final cost of the works, and this the more, since the expenditure already incurred on the Outworks made it necessary still to include them with Fort Purbrook in the Schedule.

The estimates now given include the completion of the Outworks on a much reduced scale from that originally contemplated; in other respects they only provide what is necessary to place the works in a substantial condition for defence and occupation, leaving their complete mantling to be provided for when necessary. We conceive, therefore, that no smaller sum could now properly be inserted in the estimates, though it rests with the Government and Parliament to decide whether the works shall be so completed, or whether any portion of them should be postponed or abandoned.

LAND DEFENCES.—INNER LINE.

HILSEA LINES.

Position.

65. Portsea Island is separated from the main-land by a natural canal, almost dry at low water, joining the Portsmouth and Langston Harbours, and called Hilsea Channel.

Works proposed in 1857.

A line of earthworks of small command and weak profile, constructed during the French Revolutionary War, formed the only defence when, in 1857, Field-Marshal Sir J. F. Burgoyne, Inspector-General of Fortifications, submitted a Report from Colonel Jervois, C.B. (then Assistant Inspector-General of Fortifications), in which the lines nearly as they now exist were proposed. The plans were approved by the Government, and at the date of the Report of the Defence Commission, were in progress, and received their approval. It is not, however, intended to construct the outworks which formed part of the original project.

Description.

The line lies on an arc whose chord is 2,700 yards, and versed sine 450 yards. It consists of four bastioned fronts, comprising three whole and two demi-bastions, with exterior sides of 770 yards, and lines of defence of 500 yards. There is space on the ramparts for an armament of 168 guns. The flanks were designed before the introduction of rifled artillery, with casemates for 50 guns, and were then considered to be out of the range of fire from Portsdown Hill. The merlons of earth were originally placed between each embrasure to cover the masonry, but they were hardly thick enough, and every alternate embrasure has been blocked, and a solid merlon placed between the alternate guns, a plan which is often adopted on the Continent. These casemates also afford a large amount of bombproof cover; the accommodation, which does not comprise that part of the casemates occupied by the guns, is for 408 men.

The terreplein is well provided with traverses, each containing a bombproof chamber. The protection of these buildings against horizontal fire is insufficient, being 3 feet of brickwork and 4 feet 6 inches to 5 feet 6 inches of earth. The traverses are raised 2 feet above the crest of the parapet. Immediately in front of the rampart is a wet ditch, 130 feet wide at top, 90 feet wide at bottom, and containing 8 feet of water.

Ditch.

Beyond this ditch is the tidal channel, which has been excavated to a width of 105 feet at bottom, and to a depth of 13 feet below high water mark of spring tides. Each end is now closed by a dam, for the purpose of keeping out the water during the progress of the works. It has been designed with the intention that the dams should ultimately be cut away, and the channels prolonged by dredging, to communicate with the navigable creeks of Portsmouth and Langston Harbours. Gunboats would then be able to pass from one to the other, and co-operate in the defence. As the formation of this channel beyond the extent of the lines forms no part of the work devolving on the Fortification Department, it is uncertain when it may be made, and in the meantime it will be necessary to retain the dams, to prevent the cutting in front of the lines from being silted up by the mud which would in all probability be deposited, should it be opened to the two harbours before the necessary measures had been taken for forming the channels into them.

Navigable Channel.

Communications.

Communications across the ditch and channel are provided as follows. The London Road has been diverted, will cross the channel by a rolling bridge 60 feet in span, be carried over the ditch by a standing bridge, and pass under the rampart at the left curtain. The railway at present runs over a pile bridge, and under the rampart at the right-centre curtain. It will be necessary to provide an opening in this bridge for gunboats to pass, similar to that described for the road, but no measures have yet been decided upon with reference to it.

PORTSMOUTH.

The general command of the parapets over the country in front is 30 feet, and the ground behind them is well traversed, and would afford a secure camping ground for a large body of troops.

Contracts.

66. The Hilsea Lines were commenced in August 1858, under a contract for levelling the old earthworks, and building the casemates in the flanks. A second contract, for constructing coffer-dams, excavating the channel and the ditch, and forming the ramparts, was commenced in December 1860, and suspended in December 1861, in consequence of the failure of the contractor. A third contract, for forming earthworks and constructing expense magazines, was commenced in June 1863, and completed in July 1864. A fourth contract, for the completion of the works, was commenced in March 1865, and was closed in November 1866, in consequence of the failure of the Contractors. The work was then transferred to their agent. Under this contract the works are to be completed before the 31st December, 1869, and there is every reason to believe that such will be the case.

Report.

A few unimportant slips of earthwork have occurred in the progress of the works, not more, however, than were to be expected in the formation of such a long line of rampart. They were anticipated and provided for in the contracts, and they will cause no additional expenditure. The Lines are in a secure and stable condition, and have been well and skilfully constructed. They are adapted to the requirements of a modern armament; and the enomous obstacles presented by two wet ditches, combined with the powerful flanking fire from guns both in casemates and on the ramparts, render their defensive power unusually great.

In the Schedule of 1862 the estimate for these Lines was 120,000*l.*, at which amount it remained till merged in 1865 in the General Estimate for the Inner Line of Land Defences.

Estimate.

The payments made up to the 30th June, 1868, amount to 98,495*l.*, chargeable to the Loan, and exclusive of 69,685*l.* previously provided in the Annual Estimates; the further amount required to complete is 41,074*l.* and the total estimated cost 209,254*l.*, of which 139,569*l.* will be charged to the Loan.

GOSPORT FORTS.

Works proposed in 1857.

67. The works recommended by the Defence Commission between Fort Elson and Fort Gomer were those which had been proposed by the Inspector-General of Fortifications in 1857, and sanctioned, in conjunction with the Hilsea Lines, by the Government, as a scheme for improving the land defences of Portsmouth. The Commissioners approved of these works, and further recommended that they should be connected by permanent lines, and that the flank defence of the ditches of Fort Elson should be improved.

The completion of the Lines and the improvement of Fort Elson have not been included among the works under the Loan.

The three works which have been constructed—Forts Grange, Rowner, and Brockhurst, divide the interval between the previously existing works, Forts Gomer and Elson, into four equal parts. The distance from centre to centre of each pair of the five works is 1,000 yards, and the intervals between them about 700 yards.

General Description of Works.

The plans of the three new works are almost identical, and a description of one will serve for all.

The trace of the rampart of each of the works is that of a bastion with a very obtuse salient, so that the faces are not exposed to enfilade. The flanks are long, and their fire is directed on the fronts of the collateral works, to which they afford support. The defensive enceinte consists of a wet ditch, 112 feet in width, with an intended depth of 8 feet of water, flanked by a double caponnière at the salient, by two single caponnières at the shoulders, and by the keep in the centre of the gorge.

A glacis and covered way extends in front of the faces, and will communicate with the work by means of foot bridges, which will be thrown across when required. The double caponnière is screened from fire by a large mound, forming an advanced covered way in front of the salient. The parapets have a command of 30 feet over the surface of the country, which is almost level. The ramparts of the work are intended for an armament of 19 guns on the faces and 16 on the flanks, of which four are in haxo casemates. A lower tier of 9 guns on each flank in casemates, protected by earth merlons, will give a

Armament.

powerful fire over the intervals, and on the front of the adjoining works. The keep will be armed with 10 guns on its terreplein, one of which will be in a haxo casemate, and with 10 in casemates, including those flanking the gorge ditch. The full siege armament will therefore consist of 53 heavy guns on the ramparts and in casemates, and 30 lighter guns in the keep and the caponnières, besides four 13-inch mortars. PORTSMOUTH.

There are two main magazines under the ramparts, besides one in the keep, all sufficiently well protected against fire. The 19 expense magazines are all bombproof, but excepting those in the single caponnières, are inadequately protected against the horizontal fire of the artillery of the present day. As the expense magazines on the rampart stand in all instances over the barrack casemates, there will be no difficulty, when the work is to be put in a state of defence, in making lifts to communicate between them, and in converting one or more of the barrack rooms into expense magazines as may be required. Magazines.

The keep or interior redoubt is circular. The front portion of its parapet has a command of 7 feet over the main work, the rear portion is on a level with it. The cordon of its exterior wall, as well as the coping of the wall which connects it with the flanks, is 12 feet above the plane of site, and 18 feet below the crest of the main parapet. The Keep is surrounded by a wet ditch, and is flanked by small musketry caponnières, which project from its circumference. Keep.

Each fort contains casemated barrack accommodation for 2 field officers, 14 officers, 300 non-commissioned officers and men, 8 hospital patients; and 4 horses. Barrack Accommodation.

The amount expended on the three works prior to the Loan, was 169,228*l.*, which, divided among them, will give a sum of 59,409*l.* per each work.

In 1862, the estimated cost of each of these three works, in addition to the amount expended prior to the Loan, was 60,000*l.* Estimate.

FORT GRANGE.

68. A contract for the construction of Fort Grange was entered into on the 31st August, 1858, and the fort was finished on the 20th January, 1863, in accordance with the original design, and without any failures of importance.

The ditch of this work is intended to be wet, but as no adequate provision has as yet been made for filling it with water, and the ditch without it does not afford a sufficient obstacle, it will be necessary before a time of expected attack to provide means for filling it.

The cost of this work under the Loan has been 46,635*l.*, and the total cost 103,045*l.* Cost.

FORT ROWNER.

69. Fort Rowner was commenced, under contract, in the summer of 1858. The work proceeded until September 1861, when fractures were discovered in some of the arches on the left flank and in the interior redoubt. The former were easily repaired, and tie rods were introduced to remedy the latter. Failures.

In September 1862, and again in September 1863, a portion of the escarp was pressed forward into the ditch, broken into several portions, and more or less upheaved.

The first failure was made good by the contractors, and the work was taken over from them on the 20th December, 1862, with the exception of some pieces of imperfect work, which were subsequently made good. The failure of September 1863 was made good by military labour, at a cost of 1,561*l.* The nature of the soil on which this work stands appears to have presented considerable difficulties in the course of its execution, all of which have, however, been completely remedied or obviated. Repairs.

The cost of the work under the Loan has been 53,979*l.*, and the total cost 110,388*l.* Cost.

FORT BROCKHURST.

70. Fort Brockhurst was commenced under a contract on the 31st March, 1858, and completed on the 20th December, 1862, according to the original design, without failure, at a cost under the Loan of 52,500*l.*, and a total cost of 108,909*l.* Cost.

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71. Notwithstanding the failures at Fort Rowner, we consider that all three works taken together have been well and skilfully constructed with reference to their structural stability and their powers of offence and defence, (subject however to the remark that the masonry of the keeps and the haxo casemates upon them might be exposed to serious injury by the fire of guns placed in battery against them), and that no further expenditure is required upon them. Report.

STOKES BAY LINES.

osition. **72.** The Stokes Bay Lines extend from the glacis of Fort Monckton to the rear of Browndown Batteries, in front of Fort Gomer, a distance of 2,700 yards. They are intended to secure the Gosport position against the possibility of being turned by an enemy landing on the beach, which is practicable and convenient for such an operation throughout the whole extent of the bay.

Design. The line consists of a rampart, covering a road which runs along its rear, with a wet ditch in front, 60 feet in width, and containing water 9 feet in depth, at high water of spring tides.

The lines are flanked by five batteries, containing 40 guns, besides the pieces on the old Browndown Batteries, and those in the new and powerful work at Gilkicker, which co-operate with the lines in the defence of the bay.

On the extreme right, the covered way, rampart, and ditch are continued across the valley of the Alver Stream (which is uniformly 1 foot below high water mark of ordinary spring tides), in the rear of the old Browndown Batteries, forming a dam, by closing the ends of which, the marsh extending in front of Forts Gomer and Grange, as far as Chark Common, may be inundated. This dam, which also serves as an advanced covered way, protecting the Browndown Batteries, is flanked in front by No. 2 Battery, and has at the salient a short return directed on Fort Gomer, which commands its terreplein. The communication with the front is provided for by a bridge across the ditch, and a cut in the parapet of the return. The open nature of the shingle makes it almost impossible to retain water at a high level in the ditch at this point.

The Stokes Bay Lines formed a part of the scheme of defence proposed in 1857. They were in progress when the Defence Commission was appointed, and were approved of by them.

Estimate. In 1862 the estimate for these lines was 40,000*l.*, and this amount was reduced in 1863 to 28,000*l.*, and in 1865 it was merged in the General Estimate for the Inner Line of Land Defences.

The expenditure on the works, previous to the Loan, was 48,672*l.*, which was defrayed out of the annual estimates. A farther sum of 26,448*l.* has been expended on them out of the Loan, making their total cost 75,120*l.*

Summary.

Inner Line of Defence and Gosport Position Estimate. The estimate in the Schedule of 1862, for the works forming the Inner Line of Defence and Gosport Position, amounted in the aggregate to 340,000*l.* This estimate was successively reduced in 1863 and 1864 to 328,000*l.* and 308,000*l.*, and again increased in 1867 to 318,000*l.* The expenditure under the Loan will, it is now estimated, amount to 319,131*l.*, and the total cost of the works, including previous expenditure, will be 606,716*l.*

General Remarks on Land Defences.

Report. We have now completed the description of the works occupying the Portsdown Hill and Gosport positions, and the Lines at Hilsea and Stokes Bay, and we have entered minutely into all the particulars regarding them, and recorded all the failures, however slight, that have occurred during the progress of the works; from this record it is evident that the works have been constructed with great care, and that the accidents which have occurred in their construction have by no means exceeded what might reasonably have been anticipated in works of such extent, occupying sites pointed out and fixed by the necessities of defence, but presenting great variety in their nature, making their foundations in some cases very difficult, and in other cases the works themselves liable to slips or such accidents as may be expected in treacherous soils.

GENERAL SUMMARY.

73. We have shown the various changes that have been made from time to time in the estimates, and we have now only to sum up the results.

The Defence Commissioners estimated that the complete protection of Portsmouth would require a sum of 2,400,000*l.*, in addition to 400,000*l.* for works then in progress In this sum the purchase of land was included. Estimate.

This estimate, as before stated, was reduced by the Government in 1860 (*see* Parly. Paper, No. 448, Session 1860), by the omission of two of the Spithead Forts, of the three minor works on Portsdown Hill, and of two of the works and the connecting lines of the Gosport Position, to 1,920,000*l.*, in addition to 400,000*l.* for works already sanctioned—making a total estimate (including the purchase of land) of 2,320,000*l.* for the approved project for the defence of Portsmouth.

In 1860-1, the amount voted in the Annual Estimates was 127,000*l.*; the total expenditure on land amounted to 437,005*l.*

In framing the Estimates for 1862, further changes were made, and the modified scheme of the Government, while it omitted the important works noticed above, provided also for the alteration of some and the enlargement and strengthening of others; the expenditure on land was separated from that on works, and provided for in one general item at the end of the Schedule. The result of these changes was to increase the estimate; including the 127,000*l.* paid out of the Annual Votes, it now amounted to 2,391,000*l.* for works alone; adding to that amount the sum of 437,005*l.* paid for land, the total cost of the works in the modified scheme of the Government, if completed according to the estimate of that year, would have been 2,828,005*l.*, or slightly in excess of the sum estimated by the Commissioners as the cost of the works recommended by them. Alteration.

At that time, although the probability of the introduction of iron into the construction of the works was foreseen, it was not anticipated that their cost would be seriously increased by it. In succeeding years the fallacy of this opinion became apparent, and in 1867 Colonel Jervois reported that, to meet the rapid advance in rifled artillery, it would be necessary to add 139,000*l.* to the estimate for iron shields, and 254,000*l.* to that for iron superstructures at Portsmouth.

The estimate for that year, exclusive of land, was in consequence increased to 2,540,000*l.*, with 139,000*l.* for shields, making a total estimated charge against the Loan of 2,679,000*l.*

The amount of expenditure under the Loan for the works when completed is now estimated at 2,614,174*l.*, and for shields 206,700*l.*, making a total estimate of 2,820,874*l.*

The expenditure previous to the Loan, with that to be charged against the Annual Estimates, amounts to 313,981*l.*

The account will then stand thus—

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Expenditure on Land	437,005
„ under the Loan	2,820,874
„ „ Annual Votes	313,981
Total	3,571,860
Estimate of Defence Commissioners	2,800,000
Excess	£771,860

74. It thus appears that the cost of giving the desired protection to Portsmouth, has exceeded the Estimate of the Defence Commissioners by 771,860*l.* This increase must in our opinion be attributed to the increased cost of the land, the greatly improved character of the works, and the much more costly nature of the construction adopted in the Sea Defences, and not to any want of economy in the execution of the works.

PLYMOUTH.

GENERAL REPORT.

Recommendations of Royal Commissioners.

75. In a preceding part of our Report we described in general terms the plan proposed by the Royal Commissioners for the defence of the United Kingdom, and the alterations made in that plan before it was submitted for the sanction of Parliament.

As the reductions made at Plymouth were very large, and have materially affected the defensive strength of that important position, and the resisting power of its various works, we propose, before entering upon the description of those works, to state somewhat more in detail what were the original recommendations, and what the plans adopted.

The Commissioners, in their Report, after pointing out that, in addition to protecting our ships and Government establishments, a strongly fortified position in this part of the United Kingdom would be of great importance with reference to the west of England generally, stated that their recommendations were for the most part in accordance with a Memorandum, drawn up in February 1858, and already partly adopted by the Government.

Sea Defences.

76. They then deal first with the Sea Defences. They point out the objects to which they should be directed, and they recommend that for the defence of the Hamoaze, the batteries on Drake's Island, Eastern King, and Western King should be strengthened, and a battery constructed near the site of the saluting battery at Mount Edgcumbe. For the other two objects which might be considered as one, the security of the Sound and the protection of the Dockyard from bombardment, they recommended that more powerful batteries should be constructed at Staddon Point (now generally called Bovisand), and at Picklecombe, in lieu of the imperfect works then existing at those places; that the battery at Cawsand, already commenced, should be completed, and a new open battery with a defensible guard-house in its rear should be made at Hooe Lake Point; and lastly that behind the centre of the breakwater a powerful casemated fort of such a form as to bring fire to bear in every direction, more especially to seaward, should be constructed. In the Schedule attached to their Report it is stated that this work should be armed with 100 guns.

All these positions recommended by them have been occupied, except that at Hooe Lake Point, for which no provision has been made; but the character of the works has been materially altered, and a much smaller number of heavy rifled guns substituted for the numerous 68-pounders and 8-inch guns then contemplated.

Land Defences.

77. The Land Defences they divided under four heads:—

1st. The fortification of the peninsula between the St. Germains River and the sea, to be called the "Western Defences."

2nd. The country between the St. Germains River and the Tamar, to be called the "Saltash Defences."

3rd. The country between the Tamar and the Catwater, to be called the "North-Eastern Defences."

4th. Between the Catwater and the Sound, to be called the "Staddon Heights Defences."

Western Defences.

1st. For the "Western Defences" Parliament had already sanctioned a line of works in front of the village of Antony, to consist of two powerful forts at Tregantle and Screasdon, with a minor intermediate work between them. This line they considered to be judiciously chosen, and they only recommended in addition the construction of a permanent ditch and rampart between them.

In these defences they also included the shore of Whitesand Bay, and for its defence they recommended a work on Knatterbury Hill, and a battery near the village of Rame, flanking the beach at the east end of the bay; the re-modelling of the old redoubts on the Maker Heights, and the construction of a defensible barrack in their rear. The changes made in this group of works are the omission of the intermediate work, and the

connecting lines between Tregantle and Screasdon, of the works on the Maker Heights, and of the work on Knatterbury Hill, for which, though still included in the Schedule, no provision has been made. The battery near Rame, now called Polhawn, has been constructed, and connected with Tregantle by a military road, which has been substituted for the work on Knatterbury Hill recommended by the Commissioners. PLYMOUTH.

2nd. For the Saltash Defences they proposed six works, but these were altogether omitted from the Schedule submitted to Parliament, and have never been sanctioned. Saltash Defences.

3rd. In the North-Eastern Defences they recommended an Outer Line between St. Budeaux and Catdown, with an Inner Line. North-Eastern Defences.

The Inner Line has been abandoned, and the Outer Line thrown forward, so that its right rests on the upper part of the Laira Estuary instead of on Catdown.

4th. For the Staddon Heights Defences they recommended two works connected with each other and with Hooe Lake by lines of ditch and rampart. Two works with auxiliary batteries have been constructed and connected with each other and with Bovisand by a ditch and rampart, but the line connecting them with Hooe Lake has been given up, and an enclosed work, called Fort Stamford, on the high ground in rear, substituted for it. Staddon Defences.

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78. We now proceed to relate the result of our enquiry. SEA DEFENCES.

The works undertaken for the defence of the Naval Arsenal and Port of Plymouth are in a very advanced state; the sea defences, with the exception of the Breakwater Fort and the iron protection for the guns, are nearly complete. Several of the principal land forts are completed, and the others are approaching completion. We have examined all these works in detail, and have found them to be well and skilfully constructed so far as regards permanency and stability, and we are of opinion that when their nature and extent are considered their almost total freedom from accident or failure reflects great credit on those who have been employed in their construction.

The arrangements made or proposed for the service of the guns, and otherwise, to meet the requirements of a modern armament, are, with the slight exceptions noticed in the detailed Reports of the various works, well adapted for their purpose.

Cawsand Battery, and the batteries at Eastern and Western Kings, have been constructed for lighter guns than those now alone considered fit to oppose ships of war, and will require to be re-modelled if such guns are to be mounted in them.

With reference to the powers of resistance, we are of opinion that when the works in course of construction shall have been finished, and adequately armed and manned, an attempt to enter the sound and harbour by a hostile naval force would be an operation of extreme difficulty and danger; observing, however, that the existing power of the works on the western side of the sound would be much increased by re-modelling Cawsand Battery for a heavier armament, and by the addition of submarine defences, for which the necessary preparations should be made. With these additions we believe that no hostile force would be able to gain an entrance, by naval means alone, into the sound.

With regard to the works designed and constructed to prevent a landing in Whitesand Bay, we are of opinion that Polhawn Battery, unsupported as it now exists, is insufficient.

The military road which connects it with Tregantle, and which we are informed has been substituted for the work at Knatterbury recommended by the Commissioners, affords the means of moving guns of position to any threatened point, and with a small additional battery of heavy guns to support Polhawn, that protection against a landing which in our opinion does not at present exist might be obtained.

An additional precaution might be adopted by making some preparation for mounting heavy guns in or near Fort Tregantle, to fire to seaward and to keep ships at a distance from that part of the coast.

79. The natural division of the Land Defences into four groups has already been described in the extract from the Report of the Commissioners already quoted. LAND DEFENCES.

The object for which the fortification of these positions is intended is to prevent an enemy who might have effected a landing on any point of the coast beyond the immediate limits of the sea defences from capturing the Dockyard, or taking up any position from which it could be bombarded or destroyed by fire; but as no long line of defence, such as these works constitute, embracing a circuit of 15 statute miles, is stronger than its weakest point, the entire omission of the Saltash Defences causes a serious breach in the Line, and materially lessens the powers of resistance of the other works. This omission was made upon economical grounds, having been decided upon by the Government before Object. Omission of Saltash Defences.

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Plans to be prepared for Saltash Defences.

any of the works recommended by the Commissioners were submitted to Parliament. We concur in thinking that there was no pressing necessity for incurring the heavy expense which the permanent fortification of this position would have called for, and, considering its inland situation and the extensive works with which it is connected, we are of opinion that its defence will be sufficiently provided for by making a careful study of the ground, and by the preparation in detail of well matured plans of such works as may be necessary; these should be of a solid and substantial character, and such as being commenced at short notice might speedily be made defensible, and eventually by further extension become really formidable defences requiring very powerful means for their reduction.

and for ground between Tregantle and Screasdon.

A similar course should be adopted with reference to the difficult ground between Tregantle and Screasdon, which the omission of the intermediate work originally contemplated has left more open than is desirable in case of a threatened attack.

North-Eastern Defences from Tamar to Crownhill.

80. Of the works which form the North-East Defences Crownhill Fort, which is in the centre, in advance of the whole of the rest of the line, is the most important, and is the key of the position; much care and skill have been bestowed upon its construction, it is a formidable work to attack, and, if properly defended, would require the development of very powerful means for its reduction.

Should such an attack be made, it would, from its advanced position and the nature of the ground in front of the line, receive but little support from the adjoining works; the fire of which is limited by high ground in their immediate front. This is especially the case to the left, and it would, therefore, appear desirable that a careful study should be made of the ground on its immediate flanks, and designs made, with a view to its occupation by strong field works at a time of expected attack, which, without increasing the extent of the position for defence, would add most materially to its powers of resistance; the line of works, as now constructed, will afford powerful support to these field works.

The omission of Fort Widey and of the keeps at St. Budeaux and Ernesettle, which formed part of the original design for the occupation of this ground, would cause a considerable diminution in its defensive power.

From Crownhill to the Plym.

The position from Crownhill to the Plym is one of great natural strength, which has been well and skilfully adapted for defence. With the ordinary work generally requisite to place a fortress in a state of defence at a time of expected attack, it would, with an adequate force, afford a very protracted and powerful resistance.

Between Fort Laira and Staddon.

81. Between Fort Laira on the right flank of the North-Eastern Defences and the Staddon Position a break in the line has been caused by a departure from the original scheme of the Defence Commissioners, by which the North-Eastern Defences have been advanced to the front, their right flank nearly two miles, while the left flank of the Staddon Height Defences has been thrown back, thus leaving a gap of about two miles in extent undefended, except by the difficulties of the passage of the River Plym.

Staddon Defences.

The position between the Plym and the sea as now occupied is one of great strength, completely protecting the batteries at Staddon Point from a land attack, and covering the high ground commanding the eastern side of the sound; but, from the cause just stated, the works do not now provide for the entire defence of the position; and we recommend that the same course should be followed here as at Saltash,—viz., that well-matured plans should be prepared by which the unoccupied ground might be quickly made defensible by such works as might afterwards be extended to provide for the complete defence of the position.

DETAILED REPORT.

SEA DEFENCES.—OUTER LINE.

BOVISAND BATTERY.

BOVISAND OR STADDON POINT BATTERY.

Original Design and Armament.

82. This work was originally designed in November 1860 as a granite casemated battery of two tiers, to mount 50 68-pr. and 110-pr. guns, protected by iron shields, with a large detached magazine in the rear.

Contracts were made for the foundations and basement, and the work was begun in 1861.

In 1864 the plans were revised, to adapt the work to the heavier artillery of the present day, and it is now proposed to mount 23 guns of 12 and 18 tons in a single tier of casemates protected by iron shields, with magazines and stores in the basement underneath the gun casemates, instead of the detached magazine referred to above. PLYMOUTH. Revised Design and Armament.

In September 1864 a contract was made for the completion of the work on this revised plan.

The foundations are on rock, it is well and solidly built, and there is no reason to doubt its stability and permanency, or its capability of resisting any attack to which it may be exposed. Report.

The arrangements for the service of the guns are generally satisfactory; but to meet all the requirements of the present day, some slight modifications may be necessary.

In this work the powder passes from the magazines into side passages, and provision should be made for lighting them. The disposition of the bays should be so arranged as to interfere as little as possible with the lighting. In some instances the lifts are in the immediate neighbourhood of the hatches, and the allotment of the openings prepared for the lifts and lights should be re-arranged, or the position of the hatches altered, to remove any risk that might arise from this cause.

The estimated cost of this work in the Schedule of 1862 was 80,000*l.*, which was reduced in 1863, on the revision of the plans, to 60,000*l.* and has been subsequently continued at that sum. The estimated cost of the shields in 1867 was 22,000*l.*, making the total cost of the work as then estimated 82,000*l.* The sum expended to June 30th, 1868, was 43,429*l.*, the further sum required is 14,835*l.*, making a total of 58,264*l.* The estimate for iron shields is 29,900*l.*, and the whole cost of the work, when completed, is estimated at 88,164*l.* Estimate.

BREAKWATER FORT.

BREAKWATER FORT.

83. This fort is placed immediately behind the centre of the Breakwater, in six fathoms water. Original Design.

The original design, approved in November 1860, was for a work constructed in masonry faced with granite, with four floors protected by bombproof arches; the two lower floors for stores and barracks, and the two upper floors for 33 guns, with a battery of seven guns on the top above the casemates, to fire through embrasures in a masonry parapet. The whole of the 40 guns were to be protected by iron shields. Armament.

The foundations were commenced in 1861, and have been carried up solid over the whole area of the fort, according to the original design, to a level of 2 feet above low water mark; above this level the work has been subject to several modifications consequent in great measure on the development given to the power of artillery. Foundations.

The fort, as now designed, will consist of only two floors, the lower for magazines and stores, and the upper for 18 heavy rifled guns in casemates, entirely protected from direct fire by iron, and preparation has been made for adding on the top two turrets for two guns each. Revised Design. Armament.

The work is ready to receive the iron superstructure, having been brought up to a level of 16 feet 6 inches above high water of spring tides, or 12 feet 6 inches above the level of the Breakwater; it appears so far to have been well and skilfully constructed as regards permanency and stability, and to be fully equal to the support of the structure which is to come upon it, but some of the arrangements above this level do not appear altogether satisfactory; the arched domes, as designed for the support of the turrets, are not strong enough, and the proposed manner of securing the pivots to those domes is not well adapted to sustain the shocks to which the work may be subjected in war. These arrangements, however, are merely to provide for the addition of turrets in case their construction should hereafter be approved; we are informed that it is not intended at present to erect them, and their cost is not included in the estimates which have been submitted to us, nor has the design for them yet been finally decided upon; it will, therefore, only be necessary that these points should be carefully considered before their erection is proceeded with. Superstructure. Preparation for Turrets.

The passage by which the cartridges will be conveyed to the lifts is only 3 feet wide, special arrangements for the supply of powder will therefore be necessary, to prevent confusion and delay. The recesses for the lifts are too contracted, and should be widened sufficiently to allow two men to work together in placing the cartridges in the lift. In one of the magazines the hatch is directly opposite to the lift recess, an arrangement undoubtedly objectionable, and which should be altered. Arrangements for supply of ammunition.

This fort, as far as it has gone, is well and skilfully constructed; the arrangements for the service of the guns are satisfactory; the masonry work appears to us Report.

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to be of adequate strength to resist the attack of ships armed with the most powerful artillery of the present day, and to protect the magazines from danger; but in accordance with our instructions we have not enquired into the resisting power of the iron superstructure.

Estimate. The estimated cost of this work in the Schedule of the Act of 1862 was 145,000*l*, and this sum was in 1867 increased to 155,000*l*. The amount expended to the 30th June was 100,142*l*., and the further sum of 66,920*l*. will be required to complete it, making a total of 167,062*l*.

Remarks. With reference to this increased cost as compared with the estimate of 1867, it would appear that if the fort had been completed according to the designs which had then been approved, there would have been a small saving upon that estimate. The excess therefore is to be attributed to the additional precautions which have been considered necessary as a result of the last year's experiments at Shoeburyness, and we fully concur in the necessity of their adoption.

PICKLECOMBE BATTERY.

Original Design. Armament. Revised Design. Armament. **84.** This work was designed in November 1860 as a casemated granite battery for 42 68- and 110-prs. in two tiers, and 16 guns on the platform, all protected by iron shields, with a large detached magazine in the rear. It was re-modelled in 1864: the magazines were removed to the basement under the gun casemates, the two tiers of guns were retained, but the guns on the platform were given up. It is now intended to mount 42 12 and 18-ton guns, protected by iron shields, which also cover the vertical space between each casemate.

Report. The foundations of the work are on rock, and there have been no failures. It is well and skilfully constructed, both as regards permanency and stability and its power of resisting any attack that might be made upon it. The magazine arrangements are similar to those at Bovisand, and the observations there made will apply equally to this work.

Here, where the shields protecting the two tiers of gun casemates are continuous vertically, we recommend that provision should be made to prevent the men, when loading, suffering from the concussion from the guns fired above or below them.

Estimate. The estimated cost of this work in the Schedule of 1862 was 85,000*l*.; it was reduced in 1864 to 80,000*l*., and again increased in 1867 to 87,000*l*. The cost of the shields was then estimated at 42,000*l*., making a total of 129,000*l*. The sum expended to the 30th June, 1868, was 66,525*l*., and a further sum of 14,351*l*. is required to complete it, making a total of 80,876*l*. The estimate for iron shields is 68,250*l*., making the whole cost of the work, when completed, 149,126*l*.

CAWSAND BATTERY.

Design Armament. **85.** This is an enclosed work mounting 9 guns behind earthen parapets on the sea faces, and 14 guns on the land side; it is armed with 68-pounders, 8-inch guns, and 7-inch breech-loading rifled guns: it was commenced in 1861, and completed in 1863, and is well constructed so far as permanency and stability are concerned. The arrangements for the service of the guns are adequate to the existing armament.

Position. It is commanded by the high ground immediately in its rear, and is chiefly intended to oppose any attempt to land in the bay. If re-armed with heavy rifled guns it might assist in opposing the entrance of a hostile fleet into the sound, and afford support to Picklecombe against an attack from the southward. This support would be the more necessary should the construction of the work on Hooe Lake Point, recommended by the Defence Commission, not be proceeded with; no provision has been made for this work in the Schedule of 1867.

To obstruct a force landed near the village of Rame, the Royal Commissioners recommended, in addition to the battery at Polhawn, the construction of a small work on Knatterbury Hill, and the land required for it has been purchased. They further recommended that the existing works on Maker Heights should be repaired and strengthened. No provision is now made to carry out these recommendations. The absence of any works on these points might expose Cawsand Battery to an attack from the rear that might render it untenable, and thus prevent it from fulfilling the object for which it is chiefly intended.

Exposure to attack from the rear.

Report. There have been no failures of any importance, and the work is well-constructed.

Estimate. The estimate for this work in the Schedule of 1862 amounted to 10,000*l*. in addition

to 3,257*l.*, previously charged against the Annual Estimates. In 1863 it was increased to 13,000*l.*, and the expenditure upon it, under the Loan, amounted to 12,914*l.* The total cost of the work has been 16,171*l.* PLYMOUTH.

SUMMARY.—OUTER SEA DEFENCES.

86. In 1862, the estimate for the works forming the Outer Line of the Sea Defences amounted in the aggregate to 320,000*l.* This estimate was reduced in 1863 to 303,000*l.*, and in 1864 to 298,000*l.* In 1867 it was again increased to 315,000*l.*, with 64,000*l.* for shields, making the total estimated cost 379,000*l.* Estimate.

The total cost of the works is now estimated at 322,373*l.*, including 3,257*l.*, paid out of the Annual Votes, and the cost of the shields at 98,150*l.*, making a total of 420,523*l.*, of which 417,266*l.* will be charged against the Loan.

SEA DEFENCES.—INNER LINE.

DRAKE'S ISLAND.

87. The lower battery on Drake's Island is a granite casemated battery for 21 12-ton guns, protected by iron shields. Design Armament.

There is a large magazine in the rear entirely protected from fire, communicating by subterranean galleries with the expense magazines immediately in rear of the passage behind the casemates. At the time of our visit there were only three of these expense magazines; a fourth has now been planned, but the original design having been modified in order to give more protection to these magazines from direct fire, the approaches to them and to the shell stores are so contracted and inconvenient, that we doubt whether the supply of ammunition to the guns could be maintained with the rapidity required in this important position. Magazine Accommodation.

The upper battery was designed for a barbette battery to mount five of the heaviest rifled guns. The design has now been modified, and so altered as to admit of its adaptation to the Moncrieff system, should that system be adopted. The alterations necessary to effect that object are also shown on the approved plans. According to this design it is intended, in constructing the barbette battery, to carry up the retaining walls of the traverses to the full height required for the Moncrieff carriages. The upper part of these walls will thus be exposed to fire from ships in the offing; we think this objectionable, and we recommend that the walls should not be raised in the neighbourhood of the guns until the Moncrieff carriage is adopted. Design of Upper Battery.

The foundations are on rock, and the work is well and skilfully designed with reference to its stability and permanency, and also to its power of resisting any attack that may be made upon it. The arrangements for the service of the guns are good, subject to the foregoing remarks on the magazine passages. Report.

In 1862, the estimate for this work was 35,000*l.*; in 1863, it was reduced to 32,000*l.*; and in 1865, it was merged in the Estimate for the Inner Line of Defence. The estimated cost of the shields in 1867, was 22,000*l.* The amount expended to June 30th, 1868, is 26,586*l.*, and a further sum of 8,222*l.* will be required to complete it, making a total of 34,808*l.* It is proposed to charge 566*l.* of this amount to the Annual Estimates; the estimate for iron shields is 27,300*l.*, making the total cost of the work when completed 62,108*l.*, and the charge against the Loan 61,542*l.* Should the Moncrieff system be adopted for the upper battery the additional cost would be 1,416*l.*, making the total 63,524*l.* Estimate.

GARDEN BATTERY, MOUNT EDGCUMBE.

88. The Garden Battery is a casemated granite battery for 7 guns, to be protected by iron shields. It was begun in 1862, and completed, exclusive of shields, in 1863, in conformity with the original design, for the sum of 7,804*l.* Design and Armament.

The magazines as constructed are not secure against a front fire. The attention of the officers of the War Department was called to this defect, and a plan has been laid before us for remedying it which, if carried out, will afford the desired security. There Revision of Magazines.

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were also some complaints of dampness in the magazine, caused by defects in the asphalte that have now been remedied.

Report. The work has been well and skilfully constructed with reference to its stability and permanency, and also to its power of resistance, with the exception above pointed out.

In 1862, the estimate for this work was 8,000*l.*, and it was increased to 10,000*l.* in 1863; it remained at that amount till merged in the Estimate for the Inner Line. The estimated cost of the shields in 1867 was 7,000*l.*

Estimate. The amount expended is 7,804*l.* The estimate for the protection of the magazines is 1,898*l.*, making a total of 9,702*l.*; this additional expenditure will not be charged against the Loan, but will be provided in the Annual Fortification Votes.

The estimate for iron shields is 9,100*l.*, making the total cost of the work, when completed, 18,802*l.*, of which 16,904*l.* will be charged against the Loan.

EASTERN AND WESTERN KINGS.

Armament. **89.** New earthwork open batteries for 7 and 9 guns respectively, firing through embrazures, have been added here to previously existing works; they were constructed in 1861–2, and there have been no failures in their construction.

Report. The supply of powder to Eastern Kings would be maintained with difficulty under existing arrangements. The parapet and traverses, and the protection of the magazines in these batteries, are not calculated to resist the fire of the heavy artillery of the present day, and in these respects therefore, if considered of importance, they should be re-modelled to meet the requirements, both offensive and defensive, of any attack to which they may be exposed.

Estimate. The amount for these batteries included in the estimate of 47,000*l.* for the inner line, is stated to be,—for Western Kings, 2,900*l.*, in addition to 289*l.*, previously expended under the Annual Estimates; for Eastern Kings, 2,100*l.* The amount expended under the Loan has been,—for Western Kings, 2,887*l.*, making a total of 3,176*l.*; and for Eastern Kings, 2,019*l.*

SUMMARY.—INNER SEA DEFENCES.

Estimate. **90.** In 1862, the estimate for the works forming the Inner Line of Defence to Hamoaze amounted in the aggregate to 48,000*l.* In 1863 and subsequent years it was 47,000*l.* In 1867, the cost of the shields for these works was estimated at 29,000*l.*, making the total estimate under the Loan 76,000*l.*

The cost of the works when completed is now estimated, exclusive of shields, at 49,416*l.*, of which 46,952*l.* will be charged to the Loan; the cost of the shields is estimated at 36,400*l.*, and the total cost of the works 86,105*l.*, of which 83,352*l.* will be a charge against the Loan. The excess on the estimate of 1867 is wholly due to the increased cost of the shields.

WESTERN DEFENCES.

Object of Works. **91.** These defences occupy a position, known as the Antony Position, one mile and a quarter in length, extending in front of the village of Antony from the St. Germain's River to the sea, and are designed to shut an enemy out from access by land to the peninsula within them, from which he might bombard the dockyard and arsenal.

General Design. According to the design upon which these works were commenced in 1858, it was intended to occupy this position by Fort Tregantle on the left, and Fort Scraesdon on the right, with a minor intervening work about midway between them; this plan also provided for the construction of permanent lines to secure the left flank between Tregantle Fort and the sea, and the right flank between Scraesdon Fort and the St. Germain's River. The Royal Commission adopted this design, but attached so much importance to the position that they recommended the addition of a permanent ditch and rampart between the various forts, instead of connecting them by lines to be thrown up at the time of expected attack.

Purchase of Land. The land had been purchased for the whole of the above works previous to 1858; but the two principal forts only, Tregantle and Scraesdon, with the line between Tregantle and the sea, have been constructed.

FORT TREGANTLE.

92. Fort Tregantle, on the left flank, designed for 35 guns, exclusive of the lighter guns for the defence of the ditch, is an enclosed work, about 360 feet above the sea, having ditches on the east, the north, and west sides, with revetted scarps and counterscarps flanked by caponnières. The southern side facing the sea is enclosed by lofty casemates fitted up as barracks, so arranged as to permit of a complete flanking defence, both by artillery and musketry. Within the work at its gorge is a masonry keep with guns in casemates looking into its interior, and with an earthen parapet on top; this keep contains the main magazine, and is surrounded by a ditch with revetted sides flanked from galleries. Design and Armament.

The whole of this fort appears to have been solidly and carefully constructed, and no flaws or failures have occurred during its construction. Report.

The original design has been substantially followed in execution, with the exception of the omission of a small advanced work in front of the salient. There have also been some variations in the ditch and rampart on the north front, combining improvements in defence with economy in construction. The keep has also been altered by advancing it more into the body of the work, thus simplifying and improving the trace of its gorge; and additional galleries have been constructed in the ditch of the keep.

With reference to the actual construction of the work we found that the main magazine had proved damp from the infiltration of water through the rock in which it has been constructed; measures are in course of execution to remedy this evil which promise a satisfactory result. Improvement of Magazine.

A revetment wall supporting the extreme left gun of the work has been carried up so high that the upper portion is exposed to fire from the front which would endanger that gun. Some alteration appears desirable at this point, which can be done at slight expense, but with the loss of a position for one gun. Alterations recommended.

The embrasures are, in several instances, formed with heavy blocks of granite at their inner angles, which are objectionable as likely to cause much loss to the gun detachments; the Committee recommend that they be removed, as also the interior revetments of the parapets adjoining the embrasures where they can be struck by shot.

The arrangements for the service of the guns are adapted to meet the requirements of a modern armament.

As regards the powers of resistance of this work we consider that, subject to the foregoing remarks as to one gun on the left and the granite blocks in the embrasures, this fort is well adapted for the purpose for which it has been designed; but we are of opinion that the masonry of the keep, with its gun casemates, would be exposed to serious injury by the fire from guns placed in battery against the work. The exterior of the casemated barrack, 45 feet in height, on the sea side, is entirely open to view from its very base, at ranges of 1,200 yards, with elevations that are not difficult of attainment, and therefore it is advisable that arrangements be made by which ships in the offing might be subjected to the fire of a small number of heavy guns, to prevent them from taking up a position which might be seriously detrimental to the defence of the fort and adjoining defences. According to present arrangements no heavy gun can be brought to bear from the sea front on ships in the offing. Powers of resistance.

The estimated cost of this work in the Schedule of 1862 and subsequent schedules was 130,000*l* in addition to 53,494*l*., the amount previously expended under the Annual Votes. The expenditure under the Loan to the 30th June amounted to 135,425*l*. The further sum required for the revision of the magazines, and the alterations suggested, is 1,080*l*., making a total of 136,505*l*., of which 880*l*. will be provided out of the Annual Votes, and 135,625*l*. will be charged against the Loan. The whole cost of the work will be 189,999*l*. Estimate.

FORT SCRAESDON.

93. Fort Scraesdon, on the right of the Antony Position, was designed in 1859 as a detached work upon two levels, completely enclosed in a ditch with revetted scarps 30 feet in height, flanked from caponnières and galleries within it. That part of this fort which is on the upper level, 254 feet above the sea, has two faces, the west and south-west, looking over the country in front of the Antony Position; and a third, the south, sweeping the ground immediately in rear of Fort Tregantle. 27 guns will be mounted on the ramparts. Original Design.

The portion on the lower level, 173 feet above the sea, has its principal face towards the north looking across the St. Germain's River, and a short face on the north-west looking up that river.

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According to the original design it was intended to construct an interior enclosed keep within the work on the upper level, to be formed by a range of casemated buildings with parapet on top running completely around and parallel to the exterior sides, with a line of casemates across the work from east to west separating the part of the fort on the upper level from that on the lower.

This latter line of casemates being covered with earth towards the north, and having a parapet on it, was designed to serve as a screen to prevent the interior of the work from being seen from the high ground on the opposite side of the St. Germain's River, about 2,000 yards distant.

Revised Design.

94. This design, but omitting the keep, has been followed in execution with some deviations in the flanking galleries of the ditch, and the whole appears to have been constructed in a manner to ensure permanence and stability. The escarp revetments of the lower work are all arched, communications having been made through the piers of the arches and loop-holes in the chambers, thus constituting a complete escarp gallery for defence around the lower work. During the progress of construction it became evident by the development of cracks over some of the openings between the chambers that the thrust against them was too great at that particular spot; the openings in the walls were therefore at once reduced at an expense of 1,800*l.*, since which time there has been no further movement, and the work appears perfectly stable.

The interior casemates round the exterior sides of the upper work have not been constructed, and as a consequence the barrack accommodation has been most materially reduced. It is intended, however, and in fact it is absolutely necessary, in order to make this fort defensible, that a massive traverse should be constructed across its terreplein to protect the existing casemates and especially the entrance to the grand magazine, which is to be re-modelled, from the effect of shot and shells coming over the front faces of the fort, to which they would otherwise be exposed. This traverse, as designed, is to be supported by relieving arches, which will be fitted up for the accommodation of about 80 men.

Three haxo casemates which were not in the original design have been added on the lower level, the guns from which are intended to sweep the St. Germain's River towards the east. As these guns are not of any great importance in the defence, and unless the Saltash Position is occupied may be exposed to direct fire of artillery, it would appear doubtful whether much advantage has been gained by their addition.

Service of Guns.

The arrangements for the service of the guns on the ramparts have not been completed, and the embrasures have not been cut. We have, however, to remark that the magazine accommodation is ample, and we are of opinion that it will neither be necessary nor advisable to complete the arrangements for placing guns on the ramparts until a necessity arises for the fort to be mantled for defence.

Powers of Resistance.

In reporting on the powers of resistance of the Forts Tregantle and Scraesdon it is necessary that they should be considered together as forming, in conjunction with each other, the permanent defences of the Antony Position.

95. Although these forts in themselves are very powerful, the ground in their immediate front is so undulating that an intermediate work as contemplated in the original design and approved by the Defence Commissioners would be necessary to supplement them in case of attack, for the purpose of sweeping ground which affords extensive cover and favourable positions for the attack inconveniently near to them. The position would also be much strengthened by the construction at a time of expected attack of a rampart and ditch between Fort Screasdon and the St. Germains River as originally intended, now protected only by a slight earthen breastwork.

The permanent line recommended by the Defence Commissioners to connect these forts has never been included in any schedule of works approved by Parliament, but the estimates include a military road covered by an earthen breastwork for communicating along the whole length of the position, which is to be made at a cost of 3,767*l.*, and will add much to its strength.

We are not prepared to recommend that the intermediate work should be undertaken at once, but it is so essential for the defence, that it is desirable that careful studies should be made and a well-devised project prepared, the execution of which could be undertaken at any required moment with a view to the full occupation of the position by strong works in a manner which would permit of a solid defence.

Estimate.

The estimated cost of Scraesdon, in the Schedule of 1862 and subsequent schedules, was 130,000*l.*, in addition to 16,803*l.* expended out of Annual Votes prior to the Loan. The expenditure to June 30th, 1868, amounted to 109,827*l.*, and the sum required to

complete is 10,781*l.*, making a total of 120,608*l.*, chargeable to the Loan, and the whole cost of the work when completed will be 137,411*l.* PLYMOUTH.

The cost of the military road connecting the two works amounting, as stated, to 3,767*l.*, is also charged against the 260,000*l.*, taken as the cost of the Antony Position under the Loan.

The total cost of the two works, including the military road, is estimated at 331,177*l.*, of which 260,000*l.* are to be charged against the Loan, being the exact amount of the estimate.

POLHAWN BATTERY, KNATTERBURY HILL AND WHITESAND BAY.

96. The only other work strictly belonging to the sea defences is Polhawn Battery. This is a casemated work mounting seven 68-pounders, firing through embrazures pierced in granite walls, and having a loop-holed gorge for its protection on the land side. It is intended to command the approach to the eastern side of Whitesand Bay, and is unsupported by any other work or battery, but is connected with Tregantle by a military road, which has been constructed along the top of the ridge overlooking Whitesand Bay, to afford an easy communication for guns and troops from the Antony Position to Cawsand Bay and the Maker Heights. The disembarkation of a force in Whitesand Bay, in rear of the Antony Position, must at all times be a most difficult operation, which would seem to have been sufficiently guarded against by the facility thus afforded for moving a few guns of position along this road, and by the construction of the Polhawn Battery, if that battery were so supported as not to be readily silenced from the sea. Design and Armament. Position. Military Road

The left flank of Polhawn Battery is exposed to the attack at short ranges of ships anchored out of line of fire from its guns, and it could not in our opinion offer a long resistance to an attack from that quarter, against which it would be perfectly powerless. This work was constructed in 1861-3, and appears to have been well executed so far as materials and workmanship are concerned, and the arrangements are adequate for the service of the guns with which it is now armed. Report.

A site has been purchased at Knatterbury Hill, a short distance to the northward of Polhawn, the occupation of which was recommended by the Royal Commission, for the protection of this work from assault, and also to support the battery at Cawsand; but no work has been ordered on this site, and instead of it the military road alluded to has been made. The amounts estimated for Whitesand Bay and Knatterbury in the Schedule of 1862, were respectively 10,000*l.* and 5,000*l.* The expenditure has been,—on Polhawn Battery, 8,850*l.* and on the military road, 5,776*l.*, together making 14,626*l.* The position of Knatterbury is one of great importance to the protection both of Polhawn and Cawsand. Omission of work on Knatterbury Hill. Estimate.

NORTH-EASTERN DEFENCES.

97. The Defence Commissioners recommended an Outer Line to be taken up for the defence of Plymouth, on the north-east, its left on the Tamar, slightly in advance of Saltash Bridge, and its right on Cat Down, supported by an Inner Line. The estimated cost of the works forming the two lines, including the purchase of the land, amounted to 1,550,000*l.* The Government did not think it necessary to incur this heavy expense, and they decided that only such works as could be executed for the sum of 350,000*l.* exclusive of land, or 600,000*l.* with land, should be undertaken, thus reducing the cost on this front alone by the sum of 950,000*l.* To carry out this decision of the Government several schemes were considered, and it was finally determined to abandon the inner line, to advance the right of the outer line to Efford, near the head of the Laira Basin, and to occupy the ridge which connects the villages of Egg Buckland and St. Budeaux. Recommendations of Defence Commission. Design adopted.

In this design the batteries at Ernesettle and St. Budeaux were supported by keeps on the high ground immediately in their rear, and a work called Fort Widey was designed to occupy a position near Knacker's Knoll flanking the ground in front, right and left of Crownhill; no provision has been made for these works.

Immediately in rear of the works from Ernesettle to Laira inclusive, a military road covered by a parapet, extends along the whole of the North-East Defences, affording a convenient communication between the works, and adding materially to the strength of the position.

The works on the line, excepting Efford and Laira, were commenced by contract in 1863. In 1866, the contractor failed, and from that time the works have been carried on

PLYMOUTH.

by Officers of Engineers without the intervention of a contractor; the result, we are informed, has been satisfactory, both as to execution and to economy.

ERNESETTLE FORT.

Position and Design.

Armament.

98. Ernesettle Fort, forming the left of the position, is 210 feet above the sea, and situated on a spur extending from the village of St. Budeaux towards the Tamar. It contains a casemated barrack for 60 men. It is intended for an armament of 15 guns and 6 mortars; the guns in an open battery, with three large traverses, covering expense magazines, the mortars under bombproof arches on the west flank.

The ditch in front is cut in the solid rock, and is 25 feet wide at bottom, with sides sloping at one-half to one, the base of the slope being equal to half the height. The escarps are over 30 feet in height, and the counterscarps vary from 15 to 30 feet. In rear is a gorge wall, 30 feet high, and the whole enceinte is flanked by musketry galleries.

Report.

There is ample magazine accommodation, but the protection to the main magazine, as shown in the plan, was scarcely sufficient. The plan for remedying this defect has been prepared, and the cost of the alteration is included in the estimate.

No special accommodation appears to have been provided for artillery stores, but there would be no difficulty in appropriating suitable places for them when required. This remark will apply equally to all the works to the left of Crown Hill.

In the mortar battery the opening between the casemate and the earthen parapet in front appears to be rather narrow for the proper service of the mortars. It also seems desirable that the passage giving access from the interior of the work to the mortar battery and to the casemates should be covered by a traverse in front.

Estimate.

The amount expended to 30th June, 1868, was 15,000*l.*, and the further sum required is 2,630*l.*, making the total cost 17,630*l.*

AGATON FORT.

Position and Design.

Armament.

99. Agaton Fort stands on a hill, 280 feet above the sea, 480 yards in advance of the village of St. Budeaux, and 800 yards from Ernesettle. It is surrounded by a ditch and a gorge wall of the same character as at Ernesettle, and is flanked by guns and musketry. It is constructed for 20 guns, all in open battery, excepting one in a haxo casemate on the left flank, and 6 mortars in 2 nests at the foot of the exterior slope.

Estimate.

The amount expended to the 30th June, 1868, was 35,000*l.*, and a further sum of 6,133*l.* is required to complete it, making a total of 41,133*l.*

KNOWLES BATTERY.

Position and Design.

Armament.

100. Knowles Battery is on a spur 190 feet high, slightly in advance of the general line, and 800 yards from Agaton on the left, and Woodlands on the right. It is constructed for an armament of 13 guns in open battery, except one in a haxo casemate on the right flank. There are three expense magazines in traverses, and a reserve magazine in the guard-house, affording sufficient accommodation for powder and shells.

The ground in front of this work is swept by the fire of Agaton and Woodlands, but the ditch itself is devoid of flank defence. The scarps are cut in the rock at a slope of one-half to one, and are a little over 20 feet high. The gorge wall is 30 feet high, and is flanked by a gun and five loopholes on each side of a two-storied guard-house, which, towards the battery, is covered by an earthen parapet, which will be protected by a stockade at its foot.

About 1,000 yards in advance of the line joining Knowles and Woodlands, the ridge of which Crown Hill is the highest point terminates in an eminence called Whitleigh Hill, 325 feet above the sea, or 135 feet above Knowles, and 95 feet above Woodlands; this hill limits the fire of these batteries, and offers a strong aggressive position, from which the works to the left of Crown Hill might be attacked.

Estimate.

The expenditure to June 30th, 1868, amounted to 18,000*l.*, and a further sum of 1,562*l.* will be required to complete it, making a total of 19,562*l.*

WOODLANDS FORT.

Position.

Armament.

101. Woodlands Fort occupies a site on the ridge, half-way between the villages of St. Budeaux and Knacker's Knowl, at an elevation of 230 feet above the sea, and is constructed for an armament of 18 guns, of which two are in haxo casemates on the

flanks. The ditch is on the same scale as at Agaton, and is flanked by guns and musketry. PLYMOUTH.

It has a defensible guard-room and casemated barrack accommodation for 100 men in addition to that afforded by the caponnières and flanking galleries, and has ample accommodation for powder and shells in three expense magazines in the traverses, and a main magazine.

The expenditure to the 30th June, 1868, was 20,000*l.*, and 7,973*l.* will be required to complete it, making a total of 27,973*l.* Estimate.

Crown Hill.

102. Crown Hill, the key of the North-Eastern Defences, stands unsupported upon the hill from which it takes its name, about 500 yards in advance of the Knacker's Knowl cross roads, and of a line drawn from Woodlands to Bowden. It is distant 1,800 yards from Woodlands on the left, and 1,300 yards from Bowden on the right, and is constructed for an armament of 32 guns, of which four are in haxo casemates, and 6 mortars. The highest point of its parapet is 450 feet above the sea. Position. Armament.

The ditch is 30 feet broad at bottom, excavated in the solid rock: the escarp is revetted with masonry, and the counterscarp formed as in the other works, at a slope of one-half to one;—one double and five single caponnières for guns and musketry flank the branches of the ditch; in front there is a covered way, and the Leats which convey the principal part of the water supply of Plymouth and Devonport pass under the northern glacis in tunnels having communications so constructed as to be available as counter mines if required. Design.

There are casemated barracks for 300 men, and provision is made in well protected magazines for an ample supply of powder and shells. Suitable provision is also made for artillery stores, side-arms, &c.

The expenditure to the 30th June, 1868, was 57,000*l.*, and a further sum of 19,409*l.* is required to complete it, making a total of 76,409*l.* Estimate.

Position in Front of Egg Buckland.

103. This position is occupied by—

Bowden Fort;
Egg Buckland Keep;
Forder Battery;
Austin Fort.

Bowden Fort.

104. The western face of Bowden flanks the valley towards the rear of Crown Hill. The eastern face commands the front of Forder Battery. It is constructed as a work for 12 guns in open battery, and 3 mortars, standing 345 feet above the sea. The ditch is excavated in rock, and is flanked at its salient points by musketry galleries; the escarps and counterscarps are formed at a slope of one-half to one. The gorge is closed by a wall 22 feet high, flanked by a defensible guard-room, containing bombproof barrack-rooms for 16 men, and there is ample magazine accommodation. Position. Armament. Design.

At the time of our visit little had been done to this work since the failure of the contractor.

The expenditure to the 30th June, 1868, was 11,000*l.*, and a further sum of 4,891*l.* will be required to complete it, making a total of 15,891*l.* Estimate.

Egg Buckland Keep.

105. This work stands 357 feet above the sea, 400 yards to the east of Bowden, and 800 yards from Austin on the right, and occupies the most commanding point of the position; it is designed as a barrack keep to afford accommodation for the garrisons of the adjoining works, as well as to increase their defensive power. It has revetments 30 feet high flanked by musketry, and completely protected by a glacis. The two-storied casemated barrack contains accommodation for 230 men, and ample stores for powder and shells. Position. Design.

The expenditure to the 30th June, 1868, was 10,000*l.* A further sum of 4,642*l.* will be required to complete it, making a total of 14,642*l.* Estimate.

FORDER BATTERY.

Position. Armament. Design.

106. Forder Battery stands on a spur below Egg Buckland Keep, at a height of 344 feet above the sea, and is constructed for an armament of 16 guns, with five traverses containing expense magazines. The terreplein is entirely open to the Egg Buckland Keep.

The front, from Bowden to Austin, is covered by a ditch, flanked at its salient in front of Forder by a double caponnière, communicating with Forder Battery and Egg Buckland Keep by an underground gallery. The other portions of this ditch, near the collateral works, are flanked from them.

This work is less advanced than some of the others.

Estimate.

The expenditure to the 30th June, 1868, was 9,991*l.*, and the further sum required to complete is 6,452*l.*, making a total of 16,443*l.*

AUSTIN FORT.

Position. Armament. Design.

107. Austin Fort, on the right of the Egg Buckland Position, and 800 yards from the keep, stands on the last spur of the range, and is 312 feet above the sea. It is constructed for an armament of 15 guns and 5 mortars, with five traverses containing expenses magazines. The ditch is cut in rock, at a slope of one-half to one, except the north counterscarp, which has an arched revetment in masonry, with a loopholed gallery communicating at each end with the gun casemates and musketry galleries which flank the ditch. The gorge wall, 30 feet high, is flanked by a central guard-house having two tiers of guns and musketry, and containing barrack accommodation for about 60 men, and a reserve magazine.

Estimate.

The expenditure to the 30th June, 1868, was 12,000*l.*, and the further sum required 8,607*l.*, making a total of 20,607*l.*

SUMMARY.—ERNESETTLE TO AUSTIN.

108. The cost of completing the military road from Ernesettle to Austin is estimated at 2, 665*l.*; with this addition, the cost of the works of this division when completed is now estimated at 252,955*l.* As this sum includes the purchase of plant and general charges not yet exactly apportioned to each separate work, the expenditure incurred to the 30th June, 1868, on each, must be looked upon as approximate, but is sufficiently near for all practical purposes, the total sum being accurately stated. The estimate for the completion of each work has been separately made, and we believe it to be accurate and sufficient.

EFFORD AND LAIRA POSITION.

Description of position.

109. The right flank of the North-East Defences is occupied by two works, Fort Efford and Laira Battery, separated only by a distance of 300 yards from centre to centre.

Fort Efford stands on the last knoll of a ridge extending from Compton, at a height of 246 feet above the sea, and 1,300 yards from Austin.

Laira Battery is placed on a lower spur, overlooking the Laira, at an elevation of 123 feet.

The ground in front of both works is steep, in many places inaccessible, or requiring but little labour in scarping to make it so; ditches, or counterscarps, have therefore been found unnecessary. For flank defence each work depends upon the fire of collateral batteries.

A curtain, with an emplacement for four guns, has been thrown across the valley between Efford and Laira, and its ditch is flanked by two casemates for guns at Efford.

An emplacement for five guns has been prepared on the military road connecting Efford and Egg Buckland, and another for six guns has been designed 300 yards in rear of Laira Battery; two of the guns to bear on the right of Laira Battery, and four on the Laira River and ground opposite.

FORT EFFORD.

Armament.

110. This work is being built by contract on a schedule of prices, and is designed to mount 21 guns on its terreplein, of which three are in haxo casemates, with lifts in connection with magazines in the basement. There are also two magazines in traverses, one communicating with a magazine below by a lift.

On the right flank casemates for five guns, flank the front of Laira Battery, and on a still lower level are the two casemates before mentioned, flanking the ditch which connects Efford with Laira. PLYMOUTH. Design.

The front of this work is protected by scarps at slopes not less steep than one-half to one, and from 27 to 33 feet high. The gorge is closed by a wall upwards of 20 feet in height, flanked by a defensible guard-room in its centre. At its northern extremity the gorge wall joins the escarp, but at the southern end it terminates in the parapet, and thus access is now afforded to the interior of the work; a design for completing the gorge defences and removing this defect has been prepared, and the sum required for it is included in the estimate.

The casemated barracks contain accommodation for 5 officers and 108 men.

The ventilation of the five-gun battery on the right flank is very defective, and should be improved. Report.

The work is not completely defiladed from high ground in its vicinity, from which an enemy might bring a reverse fire on the battery in its left flank, and make the casemates under it inconvenient for occupation. A traverse might be constructed to remedy this defect. The casemates under the right flank, and the haxo casemates, are also exposed to direct fire from the same high ground.

The expenditure to June 30th, 1868, has been 32,721*l.*, and a further sum of 17,682*l.* will be required, making a total of 50,403*l.* Estimate.

Laira Battery.

111. Laira Battery is designed for 10 guns in embrasures and 3 in haxo casemates. It has ample magazine room, and barrack accommodation for 2 officers and 30 men, with the requisite conveniences. It is being built by contract on a schedule of prices. Armament. Design.

The gorge is exposed to Efford, and is closed by a simple enclosure wall. The military road connecting the Efford Position with Egg Buckland joins the Plymouth and Exeter Road below the battery. Like Efford this work would be exposed to fire from batteries placed on commanding ground in the vicinity; from which however it is defiladed. Report.

The expenditure to June 30th, 1868, has been 10,877*l.*, and the further sum required is 5,928*l.*, making a total of 16,805*l.* Estimate.

Summary.—North-Eastern Defences.

112. The estimate for the North-Eastern Defences in 1862 and subsequent years, was 350,000*l.* To the expenditure on the works, which has hitherto included that on the military road, the future expenditure under that head estimated at 2,418*l.* must be added, making the total estimated expenditure, when completed, to amount to— Estimate.

	£
Ernesettle to Austin	252,955
Laira Division..	69,626
Total	£322,581

The several works thus described, and forming the North-Eastern Defences of Plymouth, have all been well and skilfully constructed so as to give them the necessary stability and permanency. In some of them we have pointed out some slight defects that might in our opinion somewhat weaken their defensive powers; with those slight exceptions we consider them to possess adequate powers of resistance; the arrangements for the service of the guns are good. Report.

STADDON POSITION.

113. This position extends from the Catwater to Bovisand, and covers the high ground from which the harbour and naval establishments are visible. Recommendations of Defence Commission.

The Defence Commissioners recommended the occupation of these heights by two works, connected by lines of ditch and rampart with the flanks, also closed by lines connecting them with the sea on one side and with Hooe Lake on the other.

This scheme has been modified.

Fort Staddon and Brownhill Battery occupy the positions selected by the Commission, and the lines connecting these two batteries with each other and with the sea at Modifications.

PLYMOUTH.

Bovisand have been formed, but in lieu of the line on the left flank connecting Fort Staddon with Hooe Lake, another work, called Fort Stamford, has been constructed further to the rear, on the heights above the village of Turnchapel.

FORT STADDON.

Armament.

114. This, the principal work, stands 406 feet above the sea, and is intended for an armament of 16 guns on the terreplein, 12 on the keep, 6 in haxo casemates, and 6 mortars

Design.

in covered casemates. It has ample magazine accommodation, and barracks for about 250 men. There is an excellent well, with an ample supply of water. Tanks are also provided.

The defensive portions of this work consist of a ditch 50 feet wide round the front and 40 feet at the gorge, and 30 feet deep, having masonry escarps and counterscarps, and flanked by two tiers of guns and musketry in caponnières and galleries.

From the inner end of the right flank of Fort Staddon a scarp 20 feet high has been cut in the rocky slope, extending to a point 800 yards from the Fort, between Brownhill and the King's Reservoir; at that point it turns towards Watch-house Brake, being broken to meet the irregularities of the ground; from Watch-house Brake a ditch completes

Watch-house Brake Battery.

the defensive connection with Bovisand Battery. These scarps are revetted artificially only where necessary; they are flanked on the east by Fort Staddon, and on the south by a small redoubt on the hill over Bovisand, called Watch-house Brake Battery, containing an expense magazine, and prepared for five guns.

Brownhill Battery.

The high ground in rear of the salient of the scarp is occupied by Brownhill Battery, a work of five faces, with an open gorge. An armament of 14 guns can be placed in this work, and four traverses, with bomb-proof chambers in them, will supply them with ammunition.

Twelve-acre Brake Battery.

At a point intermediate between Brownhill and Watch-house Brake, an emplacement for three guns, and a bomb-proof expense magazine have been provided: this is called the 12-acre Brake Battery.

Road.

A road covered by a parapet connects Fort Staddon with these three works, and with Bovisand Battery.

Estimate.

The estimate for Fort Staddon in the Schedule of 1862 was 93,000*l.*, and in that year the estimates for the whole of the works for the North-Eastern Defences and the Staddon Position amounted in the aggregate to 518,000*l.* In the Schedule of 1867 Forts Staddon and Stamford were classed with the North-Eastern Defences, and the whole cost of the works for the whole was estimated at the same sum of 518,000*l.* The expenditure on this work, to the 30th June, 1868, amounted to 111,562*l.*, and the sum required to complete is 1,282*l.*, making a total cost of 112,844*l.*, of which 112,120*l.* will be charged to the Loan.

FORT STAMFORD.

Position.

115. Fort Stamford, on a hill 165 feet high, between Jennycliffe Bay and Hooe Lake, forms the left of this position.

Its southern faces command the merchant ship anchorage in Jennycliffe Bay, and at long range will co-operate with the sea batteries in the defence of the sound. That

Armament.

part of the work is intended to receive an armament of 7 12-ton guns; 13 guns will be mounted on the land front; and positions have been prepared for 6 mortars at the salients.

Design.

The front ditch is 50 feet wide and 30 feet deep, as at Staddon, and is flanked by one double and two single caponnières with two tiers of guns and musketry. The gorge wall is 45 feet high, and is flanked by casemates under the counterscarp at the north end. The magazine arrangements are good and sufficient. The casemated barracks in the gorge of the work contain quarters for 200 men besides officers, non-commissioned officers, and married soldiers, and the requisite offices; it is well supplied with water.

A central traverse crosses the work for the purpose of defilading the communications, but from the higher ground which is seen to the east some small portions of the escarps are not entirely concealed.

Estimate.

The amount estimated for Fort Stamford in the Schedule of 1862 was 75,000*l.*, the expenditure to June 30th amounted to 59,123*l.*, the sum required to complete is 11,236*l.*, making a total of 70,359*l.*

The expenditure on Brownhill and Watchhouse Brake Batteries, and the connecting Lines, amounted on June 30th to 24,533*l.*; a further sum of 1,235*l.* is required to complete, making a total of 25,768*l.*

The total cost of the works on the Staddon Position is, therefore, 208,971*l.*

Report.

All the works in the Staddon Position are well and skilfully constructed with reference to stability and permanency, and possess great powers of resistance.

116. The cost of the works forming the North-Eastern Defences and the Staddon Position was estimated in 1862 and in subsequent years at 518,000*l.* Their total cost when completed is now estimated at 531,552*l.*, of which 530,828*l.* will be charged against the Loan. The excess on the Staddon Position amounts to 40,247*l.*; this has been partly met by a saving of 27,419*l.* on the North-Eastern Defences, making the net excess on the whole group 12,828*l.* Estimate.

DEVONPORT LINES.

117. For re-modelling the Mount Wise Batteries and Devonport Lines, 10,000*l.* were included in the Schedule of 1862. The expenditure upon them amounts to 12,724*l.*, of which 2,905*l.* were charged to Annual Estimate, and 9,819*l.* to the Loan. Estimate.

These works call for no remark.

GENERAL SUMMARY.

118. The cost of the works recommended by the Defence Commissioners for the protection of Plymouth, including the purchase of land, was estimated by them at 2,670,000*l.*, in addition to 350,000*l.* required for works then in progress, making a total cost of 3,020,000*l.* The cost of the land was estimated by them at 755,000*l.* The Government did not adopt the whole of their scheme, but in 1860, by the omission of the connecting lines of the Western Defences, and of the whole of the works for the defence of the Saltash Position, and by limiting those for the North-Eastern Defences to four, they reduced the estimate, including the purchase of land, to 1,200,000*l.*, in addition to 350,000*l.* for works already sanctioned—making the total estimate for the works they proposed for the defence of Plymouth 1,550,000*l.*

The amount voted in 1860-1 for works already sanctioned was 85,000*l.*; the amount paid for land has been 282,840*l.*

In 1862, when the land was separately estimated for, the estimate for the works was 1,191,000*l.*, and including the 85,000*l.* voted in 1860-1, 1,276,000*l.*; adding to this amount the 282,840*l.* paid for land, the total cost of the works in the modified scheme of the Government, as then estimated, would have amounted to 1,558,840*l.*

119. The estimates for the various works fluctuated in subsequent years, but the total amount was somewhat reduced. In 1867, when the cost of iron shields and iron superstructures had so much increased, and when the Maker Barracks, estimated to cost 20,000*l.*, were omitted, the estimates for the works themselves were somewhat lower than in 1862, and amounted to 1,165,000*l.*, but 93,000*l.* were added for shields, and 20,000*l.* for the increased cost of the iron-work on the Breakwater Fort, making the total estimated cost of the works when completed 1,258,000*l.*, to be provided for out of the Loan, in addition to 85,000*l.* paid out of Annual Votes.

The cost of the works under the Loan is now estimated at 1,181,341*l.*, and of the shields at 134,550*l.*, amounting together to 1,315,891*l.* The excess on the estimate of 1867 is chiefly due to the great increase on the iron shields.

The account will then stand thus:—

	£
Expenditure on land	282,840
„ under the Loan	1,315,891
„ „ Annual Votes ..	80,816
Total	£1,679,547
Estimate of Defence Commissioners ..	2,670,000
Saving	£990,453

PLYMOUTH.

Remarks.

120. The present scheme undoubtedly does not provide that complete protection which the Defence Commissioners proposed. The defence of the country between the St. Germains River and the Tamar, and of the interval between the head of Laira Estuary and Staddon Position is unprovided for, and in other places some of the supporting works have been omitted; the works thus omitted, which formed part of the scheme of the Royal Commission, would be an important feature in the defence of Plymouth against an enemy who had gained such a footing in the country as to enable him to attack it upon either of the points thus left open. In comparing therefore the expenditure incurred and required for the completion of the works in progress with their estimate, this important difference must not be lost sight of: as this however is a question of general policy, and not one bearing on the details of construction of the various works, it requires no comment from us, and we need only remark that, with all the most vulnerable points protected by powerful works, the closing of the gaps in the line would be comparatively easy, and as we have pointed out, should be carefully provided for before a time of expected attack.

PEMBROKE.

Committee of 1858.

121. In December 1858, a Report on the Sea Defences of Milford Haven was made by a Committee appointed by the Secretary of State for War.

Old Works.

The works which then existed, consisted of batteries at the entrance of the haven, on West Blockhouse Point, Dale Point, and Thorn Island, a tower for three guns on the Stack Rock; and at the dockyard the Pater Battery mounting 23 guns, with two towers for one and three guns respectively.

New Works recommended.

The Committee recommended in addition the construction of a casemated circular battery for about 45 guns on the Stack Rock; the establishment of batteries for 20 and 10 guns respectively at South Hook Point and Chapel Bay; the establishment of batteries for 45 guns at Popton and Hubberstone Points; and lastly, the improvement of the existing works at the entrance of the haven, and the establishment of a floating barrier between Popton and Hubberstone. They also recommended defensible barracks in the rear of South Hook, Popton, and Hubberstone Batteries. This project, of which the estimated cost was 190,000*l.*, had been approved by the Government, money had been voted by Parliament, and several of the works were partially contracted for and commenced.

Recommendation of Defence Commission.

With this scheme the Defence Commissioners entirely concurred, recommending the active prosecution of the works.

For the defence of the dockyard by land they recommended on the south side, self-defensible batteries at four points—Tenby, Lydstep, Freshwater East, and Freshwater West, to prevent a landing in the bays to the southward; and four works between Pennaar Pill and East Llanion Pill, on sites already purchased by the Government; these works to be connected by lines, for which it would be necessary to purchase the intervening land.

For the defence of the approach from the northward they recommended the construction of six small works at intervals of 1,400 yards resting on the haven, the left near Newton, the right at Burton.

Modifications.

Of these various works, the sea batteries for the defence of the haven, with the exception of the battery at Chapel Bay, have been or are in course of construction, as well as one at Tenby. For the battery at Chapel Bay a plan has been laid before us, but has not yet been finally decided on. Four other small works are to be constructed on the south coast,—at Proud Giltar, Eastmoor, Trewent Point, and Freshwater West, commanding the landing places pointed out by the Defence Commission.

The plans for Proud Giltar and Trewent have been sanctioned, and it is intended to construct works of a similar character on the other two points.

The line between Pennaar Pill and Llanion Pill has not been sanctioned.

On the north side one fort alone, Fort Scoveston, has been constructed in the position selected by the Defence Commissioners for the centre of the line.

In the event of an enemy advancing in force from St. Bride's or Fishguard Bay, this work would afford a valuable support to the defenders; but unless the ground on both sides of the work between it and the haven were occupied, it would not prevent him from attaining a position from which the dockyard might be bombarded.

SEA DEFENCES.

Stack Rock.

Position.

122. This fort stands on a rocky islet nearly covered at high water, 800 yards from South Hook Battery, and 1,500 yards from Chapel Bay. The main channel, 900 yards wide, lies between it and the latter work.

Original Design.

The original design was a tower, containing two tiers of 19 gun casemates each, and 16 guns on the terreplein, making 54 in all, firing through masonry embrasures.

Modifications.

On this plan, the foundations were commenced in 1859, under a contract, and completed in July 1861. The designs were then modified by the substitution of massive granite piers with iron shields in lieu of the masonry embrasures, and by otherwise

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strengthening the work. In December 1860, another contract was made for the carcase of the basement, and completed in February 1863; finally, in June 1864, a further contract on a schedule of prices was entered into for the completion of the work on a revised plan, and under that contract the building is now proceeding.

Further modifications, rendered necessary by the increasing power of artillery, were subsequently introduced. The greater part of the casemates in the basement were appropriated for magazines, and the gun casemates of the upper tier were converted into soldiers' rooms and hospital. In the basement, the outer walls protecting the magazines were increased in thickness from 9 to 12 feet, and ultimately to 14 feet, with a 3 feet passage intervening between them and the outer walls of the magazines. The improved plans for the supply of powder and shells by lifts to the casemates were adopted as far as the confined space would allow.

Present Design and Armament.

The work, as now designed, is constructed for sixteen 18-ton guns on one floor in the front casemates, and seven 7-inch guns on two floors in the gorge. Preparations are also to be made for three turrets to mount two 25-ton guns each.

There is barrack accommodation for four officers and 152 men, and 12 hospital patients.

Report.

The work has been well and skilfully constructed, with reference to permanency and stability, and there have been no failures. The foundations for the turrets are so arranged that, with due precautions and a proper distribution of the weights, they may be made amply sufficient for their purpose. The plans for the turrets do not come before us; should any alterations be required in the masonry for their reception, the cost of those alterations would be included in the cost of the turrets, for which no provision has been made.

The magazine accommodation and arrangements for the service of the guns are ample and good.

The amount of accommodation given up to the hospital materially limits that for the garrison, and it might probably be found expedient to make arrangements for landing the sick when necessary, and to increase the amount of accommodation for the garrison.

Estimate.

This work, as well as the other batteries for the defence of Milford Haven, was commenced under a Vote of the Annual Estimates prior to the Loan, and the amount expended under that Vote was 7,611*l.* In the Schedule of the Act of 1862, the estimate for its completion was 60,000*l.*, and it remained at this amount till 1865, when it was included in the General Estimate for the Sea Defences. The expenditure under the Loan to the 30th June was 48,445*l.*, and the further sum required to complete it is estimated at 19,984*l.* (exclusive of shields and turrets), together amounting to 68,429*l.* The estimated cost of the shields is 20,800*l.*, making the total cost of the work when completed 96,840*l.*, of which 89,229*l.* will be charged against the Loan.

SOUTH HOOK.

Design of Battery and Barrack.

123. This work consists of two open earthen batteries with embrasures, connected by a covered way, and from 90 to 100 feet above high water mark, and secured in the rear by a defensible barrack, capable of mounting guns on the roof, and connected with the battery by a parapet and ditch on each side. The western battery will mount fifteen, and

Armament.

the eastern five guns.

The cliff in front, though at present accessible at many points, may be effectually scarped when necessary. The approach to it, as well as the cliff itself, is well seen from the Stack Rock.

The original design has been followed with slight alterations in the batteries, but the barracks have been constructed on an entirely different plan. The work was commenced in December 1859; the battery was completed in April 1861, and the barracks in March 1865. Some modifications have been made in the batteries. Improvements have been designed in the main magazine, and additional artillery stores provided. The barrack now consists of a two-storied building with a bomb-proof roof on which guns can be mounted. The outer wall, 4 feet thick, forms a scarp 35 feet in height. Its outline is an arc with the chord broken into a bastioned shape. A double counterscarp gallery in front flanks the east and west branches of the ditch. There is accommodation for a garrison of 180 officers and men, with an adequate supply of water.

Report.

The arrangements for the service of the guns are satisfactory. The work has been well and skilfully constructed, and is secure against a coup de main.

Estimate.

In 1862, the estimate for this work was 30,000*l.* This estimate was increased in 1863 to 35,000*l.*, and in 1865 was merged in the General Estimate for the Sea Defences.

The amount expended prior to the Loan, out of the Annual Estimates, was 4,088*l.* The whole sum expended to the 30th June, 1868, under the Loan, was 38,851*l.* The improvements in the magazines and artillery stores will require 5,215*l.*, which it is proposed to charge to the Annual Votes. The total estimated cost will then be 48,154*l.*, of which 38,851*l.* will be charged to the Loan.

Hubberstone and Popton Point Batteries.

124. Hubberstone and Popton Points are opposite to each other at a distance of 1,700 yards. They are about two miles inside the Stack Rock, and about four miles from the dockyard. The edges of the deep-water channel are 400 yards from Popton and 700 from Hubberstone.

Hubberstone Battery.

125. The original design for this work consisted of a casemated battery for 12 guns, firing through masonry embrasures, with 10 guns on the terreplein above, and 10 guns in an open earthen battery, secured in the rear by a defensible barrack. Original Design of Battery.

The open battery for 10 guns was commenced in 1860, under a contract, and was completed and ready for armament in November 1860. Under this contract also the foundations of the casemates were commenced in accordance with the original design, but before much had been done it was decided to adopt the granite pier and iron shield construction. In October 1861, a further contract was made for the completion of the casemated battery, exclusive of shields, for the sum of 18,967*l.*

During the progress of the work some modifications were introduced into the design, the principal being the substitution, already alluded to, of iron shields for stone embrasures, the widening of the terreplein, and increasing the strength of the embrasures and traverses. In October 1863, the work was completed by the contractor, and handed over to the War Department.

The work now comprises a casemated battery for 11 guns, with eight guns in open battery over them, and nine guns in open battery on the left flank. The platform in the casemates is 41 feet above the sea, and the crest of the parapet in the batteries from 73 to 79 feet. The parapet of the battery over the casemates is thin, and consists of rubble masonry, affording a very inadequate protection for the guns. The expense magazines also in this battery were insufficiently protected; this defect has been to a certain extent remedied by increasing the protection by 2½ feet additional of brickwork. Present Design and Armament.

Since our visit in August, designs have been approved for alterations for the magazines, and plans have been laid before us for the substitution of eight guns mounted on Moncrieff carriages, for the eight guns now on the terreplein over the casemates. Arrangements have also been made for providing additional artillery stores and side-arm accommodation. The adoption of the Moncrieff system will give some additional strength to the weak part of the parapet, noticed above, and will add greatly to the value of the battery. Proposed Modifications.

The barrack, which is of similar construction to that at South Hook, was commenced in November 1861, under a contract. Several alterations were made during the progress of the work; and it was completed in March 1865. The principal alterations were the substitution of bomb-proof for splinter-proof buildings in the Keep, and the addition of a story in the gorge buildings. Design of Barrack.

The work is well and skilfully constructed, except that the protection given by the west ditch, and wall connecting the battery and barrack, appears at one point to be disproportioned to the strength of the rest of the work, as the ditch is there but 4 feet below the level of the ground outside, and the escarp wall is only 10 feet in height. There is also a point on the east ditch to which the same remark applies, and we recommend that a cut should be made in both ditches in such a manner as to make a 25 feet ladder necessary to reach the top of the escarp. The cost of this alteration would be defrayed out of the Annual Estimates, and the amount is included in the estimate of the total cost of the work when completed. Improvement recommended.

The arrangements for the supply of ammunition and for the service of the guns are good.

The amount expended on this work prior to the Loan was 8,211*l.* In 1862, the estimate for completing it, exclusive of shields, was 35,000*l.* In 1863, this estimate was increased to 55,000*l.*, and in 1865 it was merged in the General Estimate for the Sea Estimate.

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Defences. The expenditure under the Loan to the 30th June, 1868, amounted to 53,443*l.* The further sum required is 5,872*l.*, and as this sum will be provided out of the Annual Votes, the charge against the Loan, exclusive of shields, will still be 53,443*l.*; the estimated cost of the shields is 14,300*l.* The total cost of the work when completed will be 81,826*l.*, of which 67,743*l.* will be charged against the Loan.

Cost of Moncrieff System.

The additional cost of adapting the work to the Moncrieff system, should it be adopted, will be 6,068*l.*, and with this addition the total cost of the work would amount to 87,894*l.*

POPTON POINT BATTERY.

Design of Battery.

126. The original design for this work was similar to that at Hubberstone. During its construction, the casemates were modified for the introduction of iron shields, and the open batteries were somewhat altered in design. It now consists of a casemated battery

Armament.

for 11 guns, protected by iron shields, and 20 in open battery on a higher level partly over the casemates. The casemate guns are 45 feet, and the parapet of the upper battery 77 feet above high water mark. The rear is secured by a defensible barrack, connected with the battery by a wall and ditch.

Progress.

The battery was commenced in 1859, under a contract. Between 1859 and 1864, when the battery was completed (exclusive of shields), modifications were made, as in other works, to meet the requirements of an improved system of construction. Some increased expenditure was required to meet some difficulties in obtaining a secure foundation; those difficulties were successfully overcome, and there have been no failures.

Proposed Modifications.

Since our visit in August 1868, improvements of the same character as those at Hubberstone have been designed, to adapt the work for a heavier armament, to substitute six guns on Moncrieff carriages for the seven now forming the open battery over the casemates, and to improve the magazine accommodation. Here also the value of the battery would be much increased by the adoption of the Moncrieff system.

Design of Barrack.

The barrack keep at Popton is of a different design to those at Hubberstone and at South Hook; it is in the form of an irregular hexagon, with scarps 22 feet in height, flanked by musketry from six bastionettes, the lower portion protected by a glacis. It contains accommodation for 10 officers, 260 men, and four patients, in buildings roofed with concrete supported on iron joists, not, however, capable of resisting heavy shells. Light guns may be mounted on the roof.

Report.

The barrack was begun in 1861, under a contract, and has been completed. It is well supplied with water.

The whole work has been skilfully constructed both as to permanency and stability, and, subject to the same remarks as those made with respect to the parapet at Hubberstone, possesses fair resisting power. The arrangements for the service of the guns, when the modifications proposed shall have been completed, will be satisfactory.

Estimate.

The amount expended at Popton, prior to the Loan, was 9,623*l.* In 1862, the estimate for completing it, exclusive of land, was 45,000*l.* In 1863, this estimate was increased to 56,000*l.*, and in 1865 was merged in the general estimate for the Sea Defences. The expenditure under the Loan to the 30th June, 1868, amounted to 57,937*l.*; the further sum required to complete it, exclusive of shields, is 3,399*l.*, and as this sum will be provided out of the Annual Votes, the charge against the Loan will still be 57,937*l.* The estimated cost of the shields is 14,300*l.*, and the total cost of the work when completed will be 85,259*l.*, of which 72,237*l.* will be charged against the Loan.

Cost of Moncrieff System.

The cost of adapting the battery to the Moncrieff system is estimated at 4,968*l.*, and with this addition the total cost of the work would amount to 90,227*l.*

CHAPEL BAY BATTERY.

Position.

127. Chapel Bay lies on the south side of Milford Haven, opposite to the Stack Rock, the deep water channel being between them.

The battery is designed to co-operate with the Stack Rock Fort and the South-Hook Batteries, in the defence of the lower portion of the Haven. A site has been acquired, and plans for its construction (not however finally approved), have been laid before us.

Design.

The proposed work is of a rectangular shape, enclosed on the front and flanks by a parapet, with a ditch containing a detached wall 16 feet high, and on the gorge by a wall of the same height and a ditch; in the centre of the gorge is a defensible barrack,

containing accommodation for 3 officers, 2 non-commissioned officers, and 60 men, besides the necessary offices, and the main magazine. The whole enceinte is flanked by musketry caponnières, and the barrack has independent flank defence of the same nature. The front parapet will contain emplacements for six 9-inch guns, mounted *en barbette*, at a height of 122 feet above the sea, with suitable expense magazines for shell and cartridge. PEMBROKE. Armament.

The design is well calculated to meet the requirements of the position; the arrangements for the guns are good; and there is a sufficient provision of magazine and artillery store accommodation. The defensive power of the work is sufficient to enable it to afford an adequate resistance to such attacks as it is likely to be subject to. Report.

The estimate for the battery at Chapel Bay in 1862, was 10,000*l.*, and it remained at this amount till it was merged in the general estimate for the Sea Defences in 1865. The estimated cost of the work submitted to us is 13,754*l.* Estimate.

Summary.—Sea Defences.

128. In 1862, the total estimate for the Sea Defences, in addition to the amount already expended out of the Annual Votes, was 180,000*l.* exclusive of land. In 1863, this estimate was increased to 216,000*l.*, and in 1867 to 225,000*l.*, with 40,000*l.* additional for the cost of the iron shields for the Stack Rock, Hubberstone, and Popton Point The total cost of these works, exclusive of shields, is now estimated at 276,433*l.*, including 29,533*l.* expended prior to the Loan. The cost of the iron shields is estimated at 49,400*l.*, and the total cost of the works, complete, at 325,833*l.*; the charge against the Loan will be 232,414*l.* for works, and 49,400*l.* for shields, or 281,814*l.* against the 265,000*l.* estimated in 1867.

The cost would be increased by 11,036*l.* should the Moncrieff system be adopted.

LAND DEFENCES.

Fort Scoveston.

129. Of the six small works recommended by the Defence Commission for the protection of the Dockyard and Haven against an enemy approaching from the northward, Scoveston Fort, occupying an advanced position in the centre of the line, has alone been constructed. Design.

It is a hexagonal work, with sides of about 130 yards. The ditch is 36 feet 6 inches wide at bottom, the escarp, which is 22 feet high, being faced with masonry, and the counterscarp cut in the natural rock; it is flanked by one double and four single caponnières, each having four embrasures and eight loopholes. The work is enclosed by a rampart with chemin des rondes, covered way, and glacis. The ramparts, which are well traversed, afford space for mounting 32 guns. The rear faces are protected by a parados from reverse fire, and a traverse is thrown across the interior parade for the same purpose. There is a sufficient provision of magazine and store accommodation, and bombproof casemates for 128 men. Armament.

The work is well and skilfully constructed, and though isolated is capable of offering a considerable resistance to any attack to which it may be subjected. There have been no failures, and it is in a secure and stable condition. Report.

It was commenced on the 20th August, 1861, and continued under two successive contracts, in November 1862 and April 1864. Progress.

In 1862, the estimate for Fort Scoveston was 76,000*l.* In 1863, a reduction was made in the work, by omitting part of the barracks and the revetment walls, where they could safely be dispensed with. The estimate was thus reduced to 50,000*l.*, and it has remained at that amount in subsequent schedules. The expenditure to the 30th June, 1868, amounted to 40,610*l.*; the further sum required is estimated at 4,852*l.*, and the total cost of the work, when completed, at 45,462*l.* Estimate.

PEMBROKE.

DEFENCE OF THE COAST SOUTH OF MILFORD HAVEN.

Positions recommended by Defence Commission.

130. The points recommended by the Defence Commission to be occupied by works to oppose the landing of a hostile force were Tenby, Caldy Island, Lydstep, Freshwater East and Freshwater West, and the cost of the works was estimated at 100,000*l.*

Positions finally taken up.

The points finally selected are somewhat different from those recommended by the Commissioners. St. Catherine's Island for Tenby; Proud Giltar for Lydstep Haven and Caldy Sound; East Moor to command the Manorbeer and Swanslake Bays; a work on Trewent Point on the southern side of Freshwater East to guard that landing place; and a work near the centre of Freshwater West Bay.

St. Catherine's Island.

Armament.

Report.

Of this group the only work yet commenced is that on St. Catherine's Island, Tenby; it was begun in January 1868, under a contract, and is designed for six guns in casemates, with small iron shields, and five *en barbette* above them.

The work is well and skilfully designed both for ensuring stability and permanency, and for defending the approaches to Tenby. There have been no failures, and the work, as far as it has gone, is well built. The arrangements for the service of the guns are good and the supply of ammunition well provided for.

Upon the approved plan it is noted that it is under consideration whether the Moncrieff system should be substituted for the guns *en barbette*.

Proud Giltar and Trewent.

Plans for the works at Proud Giltar for six guns, and at Trewent Point for seven guns, have also been laid before us, but nothing has yet been done beyond purchasing the sites; the designs appear to be well suited to their object and to be economically framed.

Eastmoor and Freshwater.

No plans have yet been prepared for Eastmoor or Freshwater West; but we are informed that it is intended to construct works at these places which shall not exceed 8,000*l.* each in cost.

Estimate.

In 1862, the cost of this group of works was estimated at 80,000*l.* In 1867, this estimate was reduced to 50,000*l.* The only expenditure incurred has been at St. Catherine's, amounting, on June 30th, 1868, to 1,926*l.*; the estimated cost of the work when completed is 12,660*l.*, and 3,600*l.* will be required for shields. The estimate for Proud Giltar is 6,668*l.*, and 1,200*l.* for shields; and for Trewent Point, 8,718*l.*, with also 1,200*l.* for shields. For each of the works at Eastmoor and Freshwater West, 8,000*l.* have been taken. The total cost of the works would then be 44,046*l.*, and, completed with shields, 50,046*l.* We see no reason to doubt that for this sum the contemplated works may be constructed.

GENERAL SUMMARY.

131. The cost of the works recommended by the Defence Commissioners for the protection of Pembroke was estimated by them at 600,000*l.*, including the purchase of land, estimated at 150,000*l.*, and in addition to 165,000*l.* for works then sanctioned for the Sea Defences.

In 1860, the Government, by omitting the enceinte on the south side of the haven, and all the works on the north side except Fort Scoveston, reduced this estimate to 220,000*l.*, in addition to the 165,000*l.* for works already sanctioned—making a total of 385,000*l.* for the defence of Pembroke, including the purchase of land.

The amount expended out of the Annual Votes prior to the Loan was 29,533*l.*; the cost of land purchased amounted to 21,365*l.*

In 1862, when the cost of the land and of the works was separated, the estimates for the works under the Loan amounted in the aggregate to 336,000*l.*, and with the cost of the land to 355,735*l.*

In 1867 the estimate for the works themselves was reduced to 325,000*l.*, but 40,000*l.* was added for iron shields, making together 365,000*l.*, and with the land 386,365*l.*

The amount required from the Loan for the whole of these works when completed, is now estimated at 321,922*l.*, with 55,400*l.* for shields, making together 377,322*l.*, and with the land and previous expenditure on the annual votes 442,706*l.* The excess on

the Estimate of 1867 of 12,332*l.* is due to the increased cost of the iron shields. The necessity for that increase we have already alluded to. PEMBROKE.

The total cost of the works, including the previous and proposed future expenditure out of the Annual Votes, will amount to 421,341*l.*, or if the Moncrieff system should be adopted, to 432,377*l.*

The account will then stand thus :—

	£
Expenditure on land	21,365
„ under the Loan	377,322
„ „ Annual Votes	44,019
Total	£442,706
Estimate of Defence Commissioners ..	765,000
Saving	£322,294

132. The diminution of expenditure for the protection of Pembroke, as at Plymouth, is due to the omission of a large portion of the scheme recommended by the Commissioners for the Land Defences. Fort Scoveston alone, occupying the salient point on the north side of the haven having, as we have said, been sanctioned by the Government, who, having carefully provided for the Sea Defences, considered the completion of the Land Defences of less importance, and deferred it. Remarks.

Fort Scoveston possesses considerable powers of resistance, and would afford a very powerful support to a body of troops acting on the defensive against a force attempting to advance from the northward to gain possession of the dockyard; but as previously observed, being alone it does not afford that complete defence which the Commissioners contemplated by the construction of a chain of works enclosing the dockyard on both sides of the haven.

Whether the remote contingency of such an attack should be provided against is a question of general policy, and we only allude to it as incidentally bearing on the resisting power of the works on which we are called to report. As regards the Sea Defences constructed under the Loan, we are of opinion that, combined with floating barriers, as recommended by the Defence Commission, and with submarine defences, they will afford a very perfect protection to the dockyards against an attack by purely naval means.

PORTLAND.

PORTLAND.

GENERAL REPORT.

Works designed in 1857.

133. THE works at Portland were designed in 1857, and approved by Her Majesty in November of that year.

In the beginning of 1860 the Royal Commission reported that those works, when completed, would be very powerful, and that they would suffice to render the harbour quite secure against attack.

Recommendations of Royal Commission.

The works enumerated by them were: the Verne Citadel, supporting earthen batteries on its eastern, western, and northern sides; a small battery on the inner pier-head of the southern entrance of the harbour; a large casemated work on the extremity of the breakwater; two open batteries on Dirdale Point and Blacknor Point respectively, about 2,000 yards to the southward of the Verne; and lastly, heavy batteries, chiefly earthen, on the Nothe at the entrance of Weymouth Harbour. They also recommended the purchase of a belt of land, estimated to cost 100,000*l.*, as a measure of precaution to secure possession of the high ground from the Nothe Point, by Wyke Regis, to the East Fleet, which they considered an admirable position for the defence of the harbour against bombardment by an enemy landed in the country. The purchase of this land has not, however, been sanctioned; with the exception of the batteries to the north and west of the citadel, and the two small batteries to the southward, works are in course of construction on the sites selected.

Works now in progress.

Should the batteries to the north and west of the Verne Citadel be permanently given up, the protection of the roadstead from the fire of ships in West Bay would not be provided for.

We now proceed to describe the various works.

The Verne Citadel and the East Weir Batteries are grouped together in the schedule, and may be considered as forming one position.

VERNE CITADEL.

General Description.

134. The extensive works of the citadel have been constructed partly by contract, partly by free labour, under the superintendence of the Royal Engineer Department, and partly by convict labour; they are now carried on exclusively by convict labour.

The ditches, which are of great width and depth, were formed by excavating the stone required for the formation of the breakwater under an agreement with the Admiralty.

Report.

The work is of great strength, and well and skilfully constructed, and with the natural advantages of its position would undoubtedly resist any attack that could be made upon it. The barracks are most commodious, and afford, on a peace establishment, accommodation for 18 officers, 484 men, and 30 hospital patients.

It is not necessary to notice the various alterations that have been made during the progress of the work. The outlay has been large, and considering the natural strength of the position, and the depth and width of the ditches, perhaps a greater expense than necessary has been incurred in the flank defences. Some heavy work remains to be done in the formation of the glacis on the south-east and south-west fronts, and it is worth considering whether the amount of it may not be diminished without affecting the strength of the fortress.

The Citadel provides accommodation for the gun detachments required to man the East Weir Batteries, and access to those batteries will be given by a tunnel from the south-east angle of the work opening on the heads of the roads leading to them. Looking at their distance from the barracks, and the number of men required to man the batteries, it may be doubted whether on an emergency a single communication at this one point would admit of their being manned with sufficient quickness, and it would seem desirable to arrange for another communication from the main entrance which, we are informed, may easily be made, and at slight expense.

Communications with Batteries.

THE EAST WEIR BATTERIES.

135. At the time of the Report of the Defence Commission some batteries had already been constructed on the eastern side of the Verne Hill, but these were of little value, and are being replaced by more powerful works. Position.

The position is now occupied by six batteries, which will mount in all 27 guns at heights varying from 150 to 234 feet above the sea; they are open earthen batteries with embrasures, and it is intended to apply Captain Moncrieff's system to the flank guns of each battery. Armament.

Some trouble was experienced in obtaining secure foundations, and it was found necessary to drain considerable portions of the slope of the hill. This drainage has been effectual as far as it has gone, and even the extraordinary amount of rain which fell in December 1868 produced no bad effect. A portion of the slope on which No. 1 Battery will be placed, which has not been drained, has shown signs of movement, and will require drainage; if done by convict labour the cost will add but little to the estimated amount required for the battery. Drainage.

The four batteries on the right are most advanced towards completion. No. 1 and No. 6 on the left were not begun at the time of our visit. Progress.

The batteries are well designed and, as far as they have gone, well executed both as regards permanency and stability, and their power offensive and defensive against an enemy. They contain no barrack accommodation except what in time of war might be derived from the occupation of the Provost Establishment in their rear. Report.

The arrangements for the service of the guns are good.

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136. In 1862 the cost of the completion of the Verne Citadel and the batteries connected with it was estimated at 127,000*l.* In 1864 this estimate was reduced to 120,000*l.*, and again increased in 1867 to 125,000*l.* Estimate.

The expenditure to the 30th June, 1868, amounted to 121,515*l.*; and the sums required to complete them amounted to 13,721*l.* for the citadel, and 4,138*l.* for the batteries; of the sum required for the citadel, 3,248*l.* is to be charged to the Annual Estimates, leaving the total cost under the Loan 136,126*l.*

In addition to the charge against the Loan, 76,293*l.* had been expended on these works at Portland out of the Annual Votes prior to the Grant, making the total cost of the Verne Fortress 215,667*l.*

PORTLAND BREAKWATER.

INNER PIER-HEAD FORT.

137. This work, for four 68-pr. and four 8-inch guns, was designed in 1859, constructed under the Admiralty superintendence, and handed over to the War Department about 1862. There were some slight settlements, but no failure of importance. Present Armament.

The fort is armed, but, from its construction being entirely in masonry with the guns pointing through embrasures, it is not calculated to be of much use against iron-clad ships, and the magazine arrangements are defective. A re-arrangement and improvement of the whole work would be necessary to fit it to receive the heavier armament required to give that valuable support to the defence which its position is well calculated to afford. Revision Needed.

No plans or estimates for re-modelling it have been prepared, and should it hereafter be done the cost would probably be defrayed out of the Annual Votes, and no additional charge would be thrown upon the Loan.

The sum expended out of the Loan amounts to 2,280*l.* There had been expended out of Annual Votes 8,395*l.*, making the total cost of the work 10,675*l.* Cost.

PORTLAND BREAKWATER FORT.

138. The foundations for this work have been laid by Mr. Coode, C.E., for the Admiralty, upon a mass of *pierre perdue*, carefully brought up in layers from the clay bottom, which is about 58 feet below low water mark, to within 20 feet of that level. A ring of masonry, 200 feet in external diameter, and averaging 11 feet in thickness, with radial piers 27 feet in length, is built from 27 feet below to 12 feet above high water mark. Foundations.

PORTLAND.

Transfer to War Department.

Description in Mr. Coode's Evidence.

Settlements.

In May last, the work having been brought up to this height, was transferred to the War Department. A description of the mode in which the foundations were laid, will be found in Mr. Coode's Evidence (No. 2,377 *et seq.*). It is sufficient here to say that great care was taken to distribute the material equally with a suitable mixture of large and small stones and refuse from the quarries.

The general settlement but little exceeded that expected by Mr. Coode, whose calculations were based on his experience in constructing the inner heads of the Breakwater. This settlement appears to be still going on, though to a much less degree than formerly.

There has been some doubt as to the accuracy of the bench marks, by which the amount of subsidence has been ascertained, but there seems reason to believe that the amount stated is, for all practical purposes, sufficiently correct.

In October 1864 a more serious settlement, because an unequal one, occurred, during and after a heavy gale. It extended for nearly half the circumference of the circle on the northern and inner side, and at the lowest point, amounted to about 2 feet 3 inches.

Borings.

Before commencing the foundations, borings had been made on each quarter, and though attended with great trouble, from the depth of the water (58 feet at low water) and the exposed situation, they were carried from 8 to 12 feet into the ground. The upper part bored through was the dark blue Kimmeridge clay of the locality, becoming tougher as it went down; underneath this was marl, through which no progress could be made.

When this settlement took place it was attributed to the yielding of the clay or the strata below, since the piles carrying the staging, driven 7 or 8 feet into the ground, went down with the masonry. To meet this settlement, and to guard against a recurrence of it, materials to the amount of near 15,000 tons were added all round the foundations, but chiefly opposite where the settlement had taken place. The upper courses of masonry were taken down, a compensation course added, the levels adjusted, and the cracks that had opened in the masonry in various places filled up. Since these measures were adopted the settlement has been nearly uniform; the depression in 1868, between May and November, varying only from $\frac{6}{10}$ths of an inch to little more than an inch.

Measures adopted.

After the transfer to the War Department it was resolved to prepare for the reception of the superstructure, by taking out the hearting of loose material and substituting a bed of concrete 10 feet thick, filling up the whole centre of the circle.

Designs for Completion.

Alternative designs have been placed before us—one for an iron fort, with two tiers of casemates, to mount 14 guns in the lower tier and 15 in the upper, or 29 in all.

The second project is for a single tier iron fort, mounting 14 guns.

The third project is for a work comprising four turrets, each for two guns of the heaviest calibre.

Estimate.

The expenditure to the 30th June, 1868, when the masonry ring had been brought up to 12 feet above high water mark amounted to 75,968*l.*; the cost of completing the work on each of the three plans, and the pressure on the foundations are thus estimated.

	Total Cost, including Foundations.	Average Pressure per superficial foot on upper surface of *pierre perdue* foundation.
	£	Tons.
Two-tiered Fort, 29 Guns	273,658	1·84
One-tiered Fort, 14 Guns	199,213	1·59
4 Turrets, 8 Guns	229,846	1·96

It appears that the consolidation of the *pierre perdue* is now nearly come to an end, and that such further subsidence as may occur will be chiefly due to the compression of the underlying strata.

Report.

It is possible that a further subsidence may take place, but as the weight to be added according to either of the improved plans will fall well within the base, we are of opinion that, if care be taken in construction to carry the work up so that it shall produce no unequal pressure on its circumference, there is every prospect that the fort may be completed with safety on either plan. As the proper action of the turrets, however, depends upon machinery, which may be expected to be easily impeded by an alteration in levels,

it would appear that apart from other considerations, the turret plan, from its liability to get out of working order, is the least eligible of the three. PORTLAND.

We think it, however, judicious to postpone the decision as to the precise nature o the superstructure, until the completion of the concrete bed, and the experience which the period of its construction will afford, have thrown additional light on the subject. Postponement of Work.

In the Schedule of 1862 the cost of the completion of the Breakwater Batteries was estimated at 145,000*l.*, at which amount they remained in all subsequent schedules, until grouped in 1867 with the Nothe Fort. The expenditure to the 30th June, 1868, amounted to 75,968*l.*, the amount required to complete the work on the most expensive plan (a two-tiered iron fort) would be 197,690*l.*, and the total cost under the Loan 273,658*l.*; to this must be added 3,445*l.* expended out of Annual Votes—making the whole cost 277,103*l.* If the cheaper plan of the one-tiered fort were adopted, this amount would be reduced to 202,658*l.*, of which 199,213*l.* would be charged to the Loan. Estimate.

THE NOTHE FORT.

139. This work was originally intended to comprise a casemated battery and open earthen batteries. The earthen batteries have been given up, and it is now a casemated granite fort, designed for 10 heavy guns, protected by iron shields, and two light guns looking into Weymouth Harbour. Original Design. Armament.

The foundations were begun about the end of 1860; the land was drained and a sea wall built. These works were executed on a contract which, after some discussion, was closed at the desire of the contractors in 1862; much of their plant and materials were taken by the War Office, and the erection of the fort has since been continued by military labour; this arrangement has been attended with a considerable saving, and the result has been satisfactory. Progress.

The only failure that has occurred was in the sea wall built by contract in 1860-1, which in 1867, after heavy rains, showed signs of weakness; this weakness was traced to defective work and the use of improper material by the contractor; it was remedied at the cost of 110*l.* Report.

The upper part of the fort is now completed with an earthen parapet, but the terre-plein is unfitted to carry an armament of heavy guns. We are informed that there is at present no intention of adapting it for such an armament, and no money for such a purpose is included in the estimate for completion.

The protection afforded for the powder and shell recesses in this fort, as at present constructed, is inadequate; a design has been prepared for increasing it to the necessary extent, and the cost is included in the Estimates.

The work is well and skilfully constructed as regards permanency and stability, and, when completed as recommended, will possess considerable powers of resistance.

Since our visit modifications have been proposed to remedy the defects of the magazine accommodation, and as now designed the service of the guns will be well provided for. The cost of these alterations is estimated at 2,142*l.* Modifications.

The expenditure on this work, to the 30th June, was 86,872*l.* The amount required to complete is 6,408*l.*, making a total of 93,280*l.*, of which 89,504*l.* will be charged to the Loan, and 3,776*l.* provided out of the Annual Estimates. The estimated cost of the shields is 13,000*l.*, bringing up the whole cost of the work, when completed, to 106,280*l.* In addition to this, there had been expended out of the Annual Estimates 10,769*l.* prior to the grant of the Loan, making a total cost of 117,049*l.*, of which 102,504*l.* will be charged to the Loan. Estimate.

SUMMARY.

140. In 1862, the cost of the Nothe Fort was estimated at 80,000*l.* In 1864 this estimate was increased to 87,000*l.*; at the same time the cost of the Breakwater Fort was estimated at 145,000*l.*; amounting together to 235,000*l.* In 1867 this estimate was increased to 295,000*l.*, with 21,000*l.* for shields. The cost of the works under the Loan, when completed, is now estimated at 365,442*l.*, and of the shields 13,000*l.*, making a total charge of 378,442*l.*, and the whole cost of the works, including previous expenditure, 404,827*l.*

GENERAL SUMMARY.

141. The Defence Commissioners estimated that 630,000*l.* would be required to complete the protection of the anchorage at Portland,—viz., 380,000*l.* for the works in progress; 150,000*l.* for the works at Dirdale Point and Blacknor, including their sites, and for the batteries outside the Verne; and 100,000*l.* for the purchase of a belt of land at Wyke Regis. Neither the purchase of the land nor the works at Dirdale Point and Blacknor were sanctioned by the Government, and in 1860 (Parly. Paper No. 448) no addition was made to the works already sanctioned.

The amount paid for land was 39,332*l.*

In the Schedule of 1862 the amount required from the Loan to complete the works sanctioned, exclusive of land, was estimated in the aggregate at 352,000*l.* In 1867, this estimate was increased to 420,000*l.*, with 21,000*l.* for iron shields, making together 441,000*l.* The cost to the Loan of the works when completed is now estimated at 501,568*l.*, with 13,000*l.* for shields, or together 514,568*l.*

This estimate is founded on the supposition that the most expensive plan for the Breakwater work would be adopted. This sum would be reduced, if the turret plan were adopted, to 470,756*l.*, and if the one-tiered iron fort were adopted to 440,123*l.*

The expenditure prior to the Loan has amounted to 98,902*l.*, and it is proposed to charge 7,024*l.* of the future expenditure to the Annual Votes. With these additions the total cost of the works will amount to 620,494*l.*, and with the land to 659,826*l.*

THAMES.

142. THE Defence Commissioners considered the efficient defence of the Thames an object of the most vital importance, as involving "interests of vast magnitude; including "the security of the great powder magazine establishment at Purfleet, the important "Arsenal, at Woolwich; the large amount of valuable property extending for many "miles on either bank of the river; the fleet of merchant shipping moored in the port "of London; and lastly, the Metropolis itself." Important interests at stake.

They recommended—1st. That the entrance of the river should be guarded by moveable floating batteries stationed at Sheerness. 2nd. That the batteries which then existed at Coalhouse Point and at Shornmead, for 17 and 13 guns respectively,—being at that part of the river which is best adapted for preventing, by means of permanent works, the advance of a hostile fleet,—should be enlarged; that a new work should be constructed at the southern point of the entrance to Cliffe Creek; and that a floating barrier should be moored across the river in time of war, under the protection of these batteries. 3rd. That the works at Tilbury and Gravesend should be placed in a thoroughly efficient state in every respect as a second line; and that a second floating barrier should be prepared to be moored between them. 4th. They further recommended, in reference to the defence of Chatham, the construction of a self-defensible work on the rising ground near the village of Slough, considering that in the event of attack this work and the inundation of the marshes between it and Cliffe Creek would prevent the possibility of a landing, and thus the Dockyard would be protected from attack from the north. Recommendations of Defence Commissioners.

As this latter work would also co-operate in the defence of the Thames, it was included in their Schedule with the other new works already alluded to, as follows:— New Works proposed.

Coalhouse Point..	30 guns;	barrack accommodation,	300 men.		
Cliffe Creek ..	30 „	„	„	300	„
Shornmead ..	30 „	„	„	300	„
Slough	20 „	„	„	200	„

Estimated expense, 180,000*l.*

These recommendations were adopted by the Government; and works were designed to occupy the positions indicated, and the works at Tilbury and Gravesend are now being re-modelled and adapted for a modern armament, the cost of the alterations being defrayed entirely from Annual Votes. Recommendations adopted.

Coalhouse, Cliffe, and Shornmead form a triangle, whose sides are respectively 1,500, 2,500, and 2,000 yards. Coalhouse is 4,500 yards from Tilbury Fort, and Shornmead 4,250 from New Tavern Fort, Gravesend. Position.

COALHOUSE FORT.

143. The site of this fort was occupied by a work built in 1795, and demolished in 1854-5, when an earthen battery for 17 guns, with barracks, &c., was constructed in its place. Old works.

The subsoil consists of clay, peat, and silt, forming a very unstable foundation, which appears to have been a constant source of difficulty. Site.

The original plan for the new work, dated 23rd November, 1860, comprised 28 guns in casemates, to fire through iron shields, and 28 guns *en barbette* on the roof, with a main magazine in rear, four expense magazines, and four shell-filling rooms detached in rear of the casemates. The embrasures were to have been protected with iron shields 1 foot thick, but no details had been decided upon. The whole enceinte was to be flanked with musketry caponnières. Foundations of concrete, 6 feet in depth, extended under all the buildings. Original design of new work.

In 1861, the old fort was demolished, with the exception of some of the interior buildings, and a contract was entered into for laying the foundations for the battery, magazine, and gorge buildings. The foundations for the battery were to have been 52 feet in width, and 8 feet in depth, of concrete encased in piles 30 feet long; but before the excavation was completed, it was decided to carry the concrete down to the level of mean low water of spring tides, making it 15 feet in thickness. These foundations were commenced in July 1861, and finished in August 1862, at a cost of 29,000*l.*, the extra cost of the additional concrete being 8,250*l.* Construction of foundations.

Thames.

Basement.

A contract was then entered into for the construction of the basement which was commenced in July 1863, and completed in November 1865, some delay having ensued from the failure of the contractor, and the transfer of the contract to other parties.

Crack and settlement.

In that month a crack appeared in casemate No. 19, extending through the whole of the front wall, and partially through the rear wall; this crack is near to, and in the same direction as a crack which appeared in 1857, in the officers' quarters of the old work. Since then the crack has not materially increased, and no further settlement has taken place elsewhere. The unequal settlement to which this crack is due may, we think, in great measure be attributed to the varying nature of the ground upon which the work is placed, caused by the construction of the forts which formerly existed at this place, and by the greater portion of the weight being massed towards the outer edge of the concrete.

Design in 1867.

144. In 1867 the design was changed, and it was decided to complete the battery for 28 guns, to be mounted in an iron casemated superstructure semi-elliptical in section, strongly plated in front, and covered with concrete resting on buckled iron plates, and a contract was entered into in November of that year for altering the basement to adapt it for magazines according to the latest improvements; for completing the casemates, excepting iron; and for the construction of the gorge buildings. This work was commenced in January 1868, and is in progress at the present time.

Alternative plans now proposed.

This semi-elliptical superstructure has since been abandoned, and a design has been prepared for the construction of casemates of a form somewhat similar to that adopted for the Plymouth Breakwater Fort. According to this design, which is called A to distinguish it from two alternative designs B and C, which have likewise been laid before us, the fort will still mount 28 guns; the gorge buildings are being proceeded with, but no steps have yet been taken with reference to the iron work.

Plan A.

The alternative Plans B and C have been designed with a view to a partial adaptation of the work to Captain Moncrieff's system.

Plan B.

According to Plan B, 12 guns will be mounted at one end of the battery looking down the river, in casemates precisely of the same construction as those in Plan A, above referred to, and 8 guns at the other end of the battery in gun-pits, firing over a parapet of concrete, faced with massive granite; the gun casemates at the one end and the crest of the parapet of the gun-pits at the other, will have the same relief, but between each gun-pit a traverse will be raised 5 feet above the general level, to protect the guns from flank fire, to which they would otherwise be exposed.

Plan C.

According to Plan C, the battery will consist of only 14 guns, mounted alternately in casemates and on Moncrieff carriages, the casemates forming, as it were, a traverse between each gun-pit; these casemates will be faced with granite, and the guns in them protected by iron shields.

Flanks.

The front of the battery in each case will be flanked by musketry caponnières covered by the glacis, which also protects the basement of the battery. The gorge buildings which complete the enceinte mutually flank each other.

Report.

As regards stability and permanence we are of opinion that if the precautions hereafter referred to in the report on Shornmead are carefully attended to, although some further subsidence may be expected before the completion of the work, it is probable that it will not be of such a nature as to cause any apprehension for the safety of the structure if completed according to either of the plans which have been laid before us, but that Plan C is the least advantageous of the three. The arrangements for the service of the guns are in each case satisfactory. To make the original foundations available for the gorge buildings a trace has been adopted, which although capable of offering a solid resistance against a *coup de main* is not such as would otherwise have been desirable.

Esti...

In the Schedule of 1862 the cost of this fort was estimated at 90,000*l.*, at which it remained in each successive schedule until 1867, when it was increased to 164,000*l.*, including 54,000*l.* for the iron superstructure. The amount expended to the 30th June, 1868, was 52,512*l.*, and the further amount required to complete on Design A is 158,551*l.*, making the total estimated cost 211,063*l.* If Moncrieff's system be partially adopted according to Plan B, the estimated cost will be reduced to 163,179*l.*, and if Plan C be adopted it will be still further reduced to 142,197*l.*

Cliffe Fort.

Site.

145. This is an entirely new work. Borings were made on the site in August 1860, to a depth of 43 feet from the surface of the marsh, showing that the substrata consisted

of sand, clay, and peat. Plans were completed in November 1860 for a battery, comprising 20 guns, in granite casemates, with iron shields; 13 guns on the terreplein above, also protected by iron shields; 3 guns *en barbette;* and 2 for land defence, firing through masonry embrasures. The front, which forms a quadrant, was to have been flanked by two musketry caponnières, and the gorge buildings formed two bastioned fronts. A main magazine, four shell-filling rooms, and four expense magazines were provided within the work. All these buildings were to rest on a cake of concrete, 7 feet in thickness.

Original design.

In May 1861, a further examination of the soil was made, when at a depth of 35 feet, an iron bar was thrust down a further distance of 17 feet in 15 minutes, without meeting any solid resistance, thus confirming the result of the borings of 1860. In 1863, a well was sunk to a depth of 340 feet, the water being good and abundant; gravel was found at a depth of 60 feet, and the chalk was entered at a depth of 79 feet.

In July 1861, a contract was made for laying in the concrete foundation, designed with reference to the projected work described above; it was to have been 55 feet in width, and 8 feet in depth, encased with piles 30 feet long; but while the excavation was going on, it was determined to increase the thickness of this bed of concrete, as at Coalhouse, to 14 feet. These foundations were completed in November 1862.

Foundation.

The contract for the basement of the battery of this fort was carried out in a similar way to that at Coalhouse, and was completed in November 1865.

Basement.

146. The first report of any settlement in this work was in August 1865, when the Commanding Royal Engineer stated that the front of the basement had sunk 3 inches more than the rear face, but without any crack or fissure showing itself. In October 1865, after some heavy rains, cracks were observed in the middle of the basement, extending through the front and rear walls, and in the concrete foundations of the gorge. These cracks increased in size until November 1865, but no additional cracks have since appeared, and the existing cracks have only increased very slightly. The concrete bed on which the basement of the battery rests has subsided unequally, and at the date of our visit the levels, referred to a datum point at the right rear angle showed the following depressions:—On the right, at the front angle, $5\frac{1}{2}$ inches; at the centre, in rear, $7\frac{1}{2}$ inches; in front, 13 inches; on the left, in rear, $6\frac{1}{2}$ inches; in front, 8 inches. That portion of the foundation which is to support the battery is separated by several large cracks from that intended to support the gorge buildings.

Subsidence and cracks.

Present condition.

It appears probable that these cracks have been caused by unequal subsidence, arising from the building being placed too near the outer margin of the concrete foundation.

Cause of crack

There are 31,400 cubic yards of concrete in the foundations, weighing 45,500 tons, and covering an area of 60,000 square feet, thus producing a pressure of ·75 tons per square foot on the soil, at a depth of 15 feet 8 inches below the natural surface. The pressure of the earth which has been removed would have amounted to ·69 tons at this depth, so that the excess of pressure caused by the cake of concrete alone is trifling, being but ·06 tons per square foot. The basement weighs 12,200 tons, and the area of the concrete which supports it is 28,560 square feet. An additional weight of ·42 tons per square foot is therefore sustained by this portion, and it is to the unequal distribution of this weight, producing an unequal compression on the peat, or some other yielding stratum below, that the inequality in the subsidence must be attributed.

Pressure on foundation.

147. As at Coalhouse, the battery for this work was intended to have been casemated with a semi-elliptical iron superstructure, but this has been abandoned, and three designs, A, B, C, for completing the work, analogous to those designed for Coalhouse, have been laid before us. The first, A, is for 20 guns in iron casemates; the second, B, for 7 guns in iron casemates, and 6 guns on Moncrieff carriages; and the third, C, for 10 guns alternately in granite casemates, with iron shields, and on Moncrieff carriages.

Alternative plans now proposed.

The weights of the proposed superstructures, and the total pressure per foot superficial which they will bring upon the stratum, upon which the concrete foundations rest, are as follows:—

Pressure on foundations.

		Tons.	Tons.
A plan	20 casemates	12,756	1·59
B plan	7 „	5,644	1·59
	6 Moncrieff gun-pits	10,677	1·80
C plan	5 casemates	23,197	1·93
	5 Moncrieff gun-pits		

Thames. Report.

As regards permanence and stability, we are of the same opinion as expressed with regard to Coalhouse, and that either mode of construction may be adopted, subject to the precautions hereafter to be referred to, and we would recommend that the centres of the arch of No. 12 casemate should not be removed until the whole structure is completed. Plan C in this case also is the least advantageous structure of the three designs. The arrangements for the service of the guns are satisfactory.

Estimate.

In the Schedule of 1862, the total cost of this fort was estimated at 80,000*l.*, at which amount it remained in all successive Acts till 1867, when it was increased to 121,000*l.* The expenditure to the 30th June, 1868, was 39,440*l.*; a further sum of 123,497*l.* is required to complete it, making the total estimated cost of the work, if completed entirely with casemates according to Design A, 162,937*l.* If Design B be adopted, the cost will be 124,815*l.*; and if Design C be adopted, it will be still further reduced to 114,191*l.*

Shornmead.

Old works.

148. In 1795 a 4-gun battery was constructed at Shornmead, which was demolished in 1847 and replaced by a 13-gun battery with a defensible gorge; but in 1848, before this latter work was completed, extensive subsidences, cracks, and slips took place, to repair which various fruitless efforts were made, and continued at intervals until 1861, when it was demolished, and the excavations for the present work were commenced.

Original design.

The original design for the new work, dated 23rd November, 1860, comprised a range of 20 gun casemates with iron shields, 14 guns on the roof, behind a masonry parapet, also with iron shields, and 2 pivot guns, making 36 guns in all. A main magazine, four expense powder magazines, and four shell-filling rooms were provided in rear, besides additional barrack accommodation beyond that already in existence in the gorge building. The enceinte was to be flanked by musketry.

Borings.

Preliminary borings were made in May 1861, indicating strata of soft clay and peat to a depth of 25 feet. An iron rod was put down to a further depth of 15 feet without reaching any solid ground. Records of subsequent borings show that beyond this there are about 40 feet of sand and gravel, and chalk was found at a depth of 76 feet from the surface.

Foundations.

In 1861 a contract was entered into for laying in concrete foundations under the proposed buildings, 8 feet in depth, encased in piles 30 feet long. During the excavations the earth in the bottom of the trench showed a tendency to rise in the middle, and a considerable upheaval was caused by the proximity of a heap of ballast pressing on the natural surface with a weight of ·35 tons per foot superficial; the trench at this time was 7 feet in depth, and was encased on each side with 30-foot piles; the nearest edge of the ballast heap was 19 feet from the side of the trench. It was then decided to increase the depth to the level of mean low water of spring tides, making the thickness of the concrete foundation 14 feet 6 inches. These foundations were completed in November 1862. The bed of concrete thus laid in measured 20,800 cubic yards, and weighed 30,000 tons, pressing on each square foot of the bottom of the trench with a weight of ·75 of a ton, or ·06 of a ton more than before the excavations were made.

Subsidence.

Eight months afterwards, in April 1863, before the basement was commenced, a subsidence of 3 inches was observed in the upper surface of the concrete, and was attributed to shrinkage in the concrete, which, in consequence of the difficulty experienced in keeping the trench open, had been thrown in as fast as possible.

Basement.

149. The Commanding Royal Engineer recommended that the construction of this fort should be delayed to the last of the Thames forts on account of its foundation not being so good as that of the others. A contract was, however, entered into in May 1863, for the construction of the basement at this as well as the other forts. The first contractor having failed to carry out the work, it was transferred to another, and completed in May 1865.

Pressure on Foundation.

The weight of the basement is 9,200 tons, and the area of the concrete foundation which supports it is 24,000 square feet; it therefore adds a pressure of ·37 tons per superficial foot to that produced by the concrete alone, making a total pressure of 1·12 tons per square foot. This is in a measure balanced by the pressure of the surrounding earth, which amounts to about ·70 tons per square foot at that depth, thus leaving an unbalanced excess of ·42 tons per square foot on the underlying strata.

Settlement and cracks.

In November 1864, previous to the completion of the basement, settlement was again noticed in the work, the depression having taken place very regularly in a slope downwards from the right to the centre, rising again very slightly towards the extreme left, a slight crack in No. 12 casemate appearing about the same time. In March 1865 this crack

increased, and another appeared in No. 4 casemate, the latter being near where the new work crosses the ditch of the old work of 1847. The unequal compression of the underlying strata by the previously existing works appears to have determined the position of the fractures. The cracks increased so very slowly that in March 1866 it was considered that the settlement had reached its maximum, and accordingly the arch of No. 12 casemate was made good, but it again opened at the end of 1867, and has not since been touched.

Present condition.

The present state of the levels referred to a datum point at the right rear angle of the casemates, shows the following depressions:—At the right front angle $6\frac{1}{2}$ inches; at the centre,—in rear $6\frac{1}{2}$ inches, in front $11\frac{1}{2}$ inches; near the old ditch,—in rear $14\frac{1}{2}$ inches, in front 17 inches; on the left,—in rear $5\frac{1}{2}$ inches, in front 10 inches.

Alternative Plans.

150. The designs for this work have gone through the same series of changes as those for Coalhouse and Cliffe, and three alternative plans for its completion, A, B, and C, have been laid before us. The first, A, for 20 iron casemates; the second, B, for nine iron casemates, and five guns on Moncrieff carriages; and the third, C, for 10 guns alternately in granite casemates, with iron shields, and on Moncrieff carriages.

Weights of work when finished.

The weights of these superstructures, and the total pressure per superficial foot which would in each case be brought to bear on the underlying strata, are shown below:—

		Tons.	Tons.
A plan	.. 20 iron casemates ..	9,322	1·54
B plan	.. 9 „ ..	4,476	1·54
	.. 5 Moncrieff gun-pits ..	7,275	1·75
C plan	.. 5 casemates	16,952	1·88
	.. 5 Moncrieff gun-pits ..		

Difficulties of site.

151. From the description which has been given of these three forts at Coalhouse, Cliffe, and Shornmead it will be evident that the sites on which the necessities of defence have required them to be placed are of a very treacherous nature, having soft compressible strata underlying them to a very considerable depth, and imposing great difficulties in the way of the construction of works, which to accomplish their object, must be of a very weighty character. When to these difficulties are added others arising from the disturbance of the ground by the construction of former works at Coalhouse and Shornmead it may be easily understood that the task imposed, of placing forts on these sites, involved, as regards foundations, a problem of no very easy solution.

Subsidence at Shornmead.

At Shornmead, where the settlement has been greatest, an average weight of ·42 tons on the square foot in excess of the weight of the ground in its natural condition has produced a subsidence of the centre line of the casemates varying from $2\frac{1}{2}$ to 15 inches at the worst point. This subsidence being invariably more to the front than at the back of the line of casemates, in consequence of the centre of gravity of the mass being about 3 feet in front of the centre of the base supporting it.

At Cliffe.

At Cliffe the subsidence has been less, varying from $2\frac{1}{4}$ to 10 inches, but following the same law, the front having sunk more than the rear; and at Coalhouse similar effects have been produced, but in a much less degree.

These facts all point to the necessity of using very great care in loading the foundations equally, so that the centre of pressure shall be maintained as nearly as possible in the the centre of gravity of the base. The question still remains whether it is to be expected that the foundations as laid will be capable of supporting the buildings that are to be placed upon them. These buildings will increase the weight in addition to that which the ground in its natural state carried from ·42 of a ton now on it to ·84, 1·05, and 1·18 tons respectively per square foot, according as A, B, or C plan is adopted.

Further subsidence to be anticipated.

It is very evident from the mere statement of these weights that a very considerable amount of subsidence must take place in either case, and therefore it is desirable as much as possible to avoid any construction which might be endangered by unequal settlement. For this reason, and because it is the heaviest of the three plans and also mounts the fewest guns, we are of opinion that Plan C for mounting guns alternately in casemates and gun-pits is the least advantageous, although the less costly. In the other two structures the roof is supported on iron beams which are less likely to be disturbed by settlements.

Special precautions.

The bed of concrete in the foundations having been broken through in several places, we recommend that in the construction of the work the continuity of the superstructures be interrupted at those points where cracks have occurred and their completion deferred until the subsidence has reached its limits, also that the centres should be retained under the arches in which any movement has occurred, until the whole work has taken its final

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bearing. Any new buildings which it may be necessary to construct in connection with those now erected, should be kept separate from them until they, as well as the buildings with which they are to be connected, have also taken their final bearing.

timate.

In the Schedule of 1862 the total cost of this fort was estimated at 80,000*l.*, at which it remained in all subsequent schedules until 1867, when it was increased to 118,000*l.*

The expenditure to the 30th June, 1868, was 32,600*l.*, the further sum required to complete it is 115,105*l.*; making the total estimate of its cost, if constructed entirely with iron casemates according to Plan A, 147,705*l.*

If Plan B be adopted, the cost will be reduced to 115,753*l.*, and if Plan C, it will be still further reduced to 99,088*l.*

SLOUGH FORT.

Position.

152. Slough Fort is situated on the point of that name on the right bank of the Thames, about ten miles below Cliffe Fort, and four miles to the west of the works on the Isle of Grain at the entrance of the Medway. Except at this point, all access to the mainland on the southern shore of the Thames can be effectually cut off by inundating the marshes which intervene between the river and the high ground; and this fort has been con-

Design.

structed to prevent an enemy landing at the only accessible point for the purpose of attacking Chatham Dockyard from the north. The work is semicircular in form, and is constructed principally of granite and Kentish rag-stone. The magazines are in the basement; the gun-floor consists of seven casemates for 7-inch 7-ton guns, protected by the smaller class of iron shields, 7 feet square; the terreplein above is prepared for three guns, with two expense magazines having lifts communicating with the lower floors. There is accommodation for three officers, one non-commissioned officer, and 70 men; with offices, and an adequate water supply. The escarp is 38 feet high, and the gorge is flanked by musketry. The entrance is at present closed by a gate, which we consider an insufficient protection; a ditch and drawbridge has therefore been introduced at our recommendation into the approved plans, the cost of which is included in the estimate, and will, we are informed, be defrayed out of the Annual Votes.

Report.

The work has been well and skilfully constructed, and is well calculated for the object for which it was designed; the arrangements for serving the guns and for storing ammunition are good, and there have been no failures. The work is complete, with the exception of some trifling fittings, and the drawbridge.

Estimate.

The estimate for this work in the Schedule of 1862 was 15,000*l.* This estimate was increased in 1865 to 20,000*l.* In 1867, an addition of 4,000*l.* was made for shields, making the total estimate for the work, 24,000*l.*

The expenditure up to the 30th June, 1868, was 22,343*l.* A further sum of 800*l.* is required to complete it, of which it is proposed to charge 160*l.* to the Annual Estimates. The cost under the Loan, exclusive of shields, will be 22,983*l.* The shields will cost 4,200*l.*, and the total cost of the work, including shields, will be 27,343*l.*

GENERAL REPORT.

Permanency and stability.

153. We have already treated of the permanency and stability of the works for the defence of the Thames in reporting on Shornmead, which presents the greatest difficulties in construction.

Power of resistance.

Plan A.

Plan B.

As regards their powers of resistance, we have to report that the alternative designs A and B will give the same number of guns under precisely similar conditions in the most important portion of each battery looking down the river. By the substitution of Moncrieff gun-pits, as proposed in plan B, for casemates on the other portions of the batteries which look across and up the river, the guns on those portions will be reduced one half, at Coalhouse there will be 8 instead of 16; at Cliffe, 6 instead of 13; at Shornmead, 5 instead of 11. If several ships could engage this portion of each battery simultaneously, this reduction in the number of guns might be detrimental; but here, where the river is of no great breadth, and the channel close to the battery, this objection has not the same force,

Each battery would engage single ships in succession, and thus, by the greater power of concentration afforded by the Moncrieff carriage, a heavier fire would be brought against each ship than could be obtained by the guns in casemates firing through embrasures. We think, therefore, that with the protection against a flanking fire afforded by the raised traverses, the Moncrieff gun-pits might, if approved, be substituted for the casemated batteries as proposed in Plan B, and the batteries so constructed, notwithstanding the reduction in the number of the guns might, with the assistance of submarine defences, and a good substantial floating barrier, supported by the Inner Line at Gravesend, afford a substantial defence to the Thames against attack by naval means. THAMES.

According to Plan C, the reduction in the number of guns will be made in those faces which look down the river, as well as on those which look across and up it; this will cause a very great diminution in the power of the most important parts of the batteries, and diminish their efficiency most seriously. The powers of concentration also on the other portions of the batteries are not so great as on Plan B. These considerations coupled with the reasons before referred to, relating to their structure, lead to the conclusion that Plan C is the least advantageous of the three which have been brought before us. Plan C.

The whole of the forts are so designed as to be capable, if properly manned, of affording adequate resistance to a *coup-de-main*. It is, however, most desirable, considering the vast amount of property to be protected and the importance of the security of the Thames, that the Inner Line at Tilbury and Gravesend should, as recommended by the Commissioners, be placed in a thoroughly efficient state in all respects; and in the event of war that it also should be provided with a floating barrier or submarine defences.

154. In making the above observations as to the sufficiency of these batteries for the purpose for which they are intended, we think it right to observe that, by our instructions, it is no part of our duty to determine what is the best plan for adapting these works for Captain Moncrieff's system, but only to report our opinions on the powers of resistance of the various works, if constructed on the designs laid before us: but as Captain Moncrieff, in the evidence he has given to us, has made some objections to the proposed adaptation of the existing works at Coalhouse, Cliffe, and Shornmead, to his system, according to either of the plans proposed, we assume that they have yet to receive much further consideration before the designs are finally approved.

In the Report of the Defence Commissioners, the total cost of these works, including land, was estimated at 180,000*l.* The land has cost 7,877*l.*

In the Schedule of 1862, their total cost, exclusive of land, was estimated at 265,000*l.*, which was increased in that of 1865 to 270,000*l.*, and again in 1867 to 426,000*l.* and 4,000*l.* additional for shields, making their total estimated cost 430,000*l.* stimate.

The estimated cost to complete them according to Plan A, with iron casemates throughout, will be 544,848*l.*, with 4,200*l.* additional for shields at Slough, making a total of 549,048*l.*, or 119,048*l.* in excess of the estimate of 1867.

If Plan B be adopted throughout, the estimated cost to complete these works, including 4,200*l.* for shields, will be 431,090*l.*, or 1,090*l.* more than the estimate of 1867.

If Plan C be adopted throughout, their estimated cost, including 4,200*l.* as before for shields, will be 382,819*l.*, or 47,181*l.* less than the estimate of 1867.

MEDWAY AND SHEERNESS.

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GENERAL REPORT.

Recommendations of Defence Commissioners.

155. In considering the defences of the Medway, the three objects to which the Commissioners turned their attention were :—

1. The security of Sheerness Dockyard against bombardment.

2. To guard against the occupation, by an enemy, of the anchorage in the entrance of the Medway.

3. To deny the navigation of the river to an enemy, thus securing Chatham Dockyard against a naval attack.

Under the first head they stated that the works necessary to protect Sheerness against bombardment would be of so extensive and costly a nature that they would not recommend any permanent defensive measures for that purpose. They considered, however, that moveable floating batteries should be stationed at Sheerness for the purpose of aiding in the defence of the Thames and Medway.

For the second object, the protection of the anchorage, they recommended that in addition to the batteries on the north front of the Sheerness lines, which were well armed and covered the channel of approach, a powerful casemated work should be constructed on Garrison Point, in lieu of the existing battery, and a second on the Grain Spit, enclosing the existing tower, supported by an open battery on the Isle of Grain. This battery to be secured against assault by a work on the rising ground at its rear.

For the third object, the closing of the river to an enemy, they recommended that works should be constructed about four miles below St. Mary's Island, at Okeham-ness, and the small island to the eastward of it on the opposite shore, and that at a time of expected attack a boom should be placed between them to close the navigation of the river.

For the defence of Sheerness against an attack by land they considered the existing old fortifications inadequate, and they recommended that a position about 3,500 yards in advance of them should be occupied by three works; the main one on Furze Hill with an advanced work on each side of it. The ground between this advanced position and the existing works might in great part be inundated to the depth of 2 feet, by cutting through the sea wall.

Estimate.

The cost of these works, including land, they estimated at 300,000*l.* for the sea defences, and 150,000*l.* for the land.

Alterations.

The alterations made in this scheme were—1. The omission of the work on the Grain Spit, estimated at 100,000*l.* 2. The substitution of the position of Hoo and Darnet, higher up the river, for Okeham-ness and the island opposite to it. 3. The substitution of a line of ditch and parapet between Cheney Rock and the Medway, near Queenborough, for the advanced position in front of Sheerness. This line to be secured at each end by a tower.

SEA DEFENCES.

156. The works on the Isle of Grain consist of a fort and open battery.

GRAIN FORT.

Description and Armament.

The Isle of Grain Fort occupies the highest point of the Island. It has earthen ramparts and an unrevetted ditch flanked by musketry caponnières, in which a palisade is intended to be placed, with a casemated keep at the gorge containing barrack accommodation for 250 men. It was originally designed, and has been constructed, for 16 heavy guns bearing on the entrance of the Medway, at a range of 1,500 yards to the nearest point of the channel, with 12 lighter guns on the land faces. A design has been laid before us for adapting the battery to the Moncrieff system if thought desirable, involving the reduction of one gun.

In the construction of the work no difficulty was experienced in obtaining a secure foundation. The earthen ramparts were at first made with a slope of one to one; this slope, from the nature of the material used, proved insufficient to give them stability; an attempt was made to remedy the evil by re-building them with the same material at a slope of one and a-half to one, with layers of brushwood, but this also failed in part, and they have now, where necessary, been re-modelled with a slope of one and three-quarters to one, by removing the clay and replacing it by gravel and sand from the glacis. The new work as far as it has gone stands well. With this exception the work has been well and skilfully constructed, and we see no reason to doubt its permanency; though should any further failure of the slopes take place in those parts not re-modelled, some outlay might be required to put them in a proper state.

Report.

Since our visit to the fort in May, several necessary improvements have been proposed in the arrangements for the supply of ammunition, and when carried out the service of the guns will be well provided for.

Modifications.

A magazine was also proposed in the upper part of the centre of the keep, for the supply of the seven guns to be mounted on the roof, but as the position selected would be exposed to shots passing over the rampart, we recommended that it should be placed in the basement, with a lift to the roof, so as to be quite secure from all fire; this alteration has now been made in the plan, and provided for in the Estimates.

The embrasures, as originally designed, had the weakness inherent in that form of battery when exposed to heavy projectiles, and it is now proposed to adopt the Moncrieff system, should it be found applicable to guns of 12 or 18 tons. It may be doubted whether at this distance from the deep-water channel an ordinary barbette battery might not answer the purpose as well as the more expensive plan for the Moncrieff system. It would then be equal in power of resistance to any attack that might be made upon it, and the fire of its heavy guns would materially assist in the defence of the passage against ships attempting to force it.

Estimate.

The amount expended to the 30th June, 1868, was 99,845*l.*, and the further sum required for its completion with embrasures is 14,869*l.*, making a total of 114,714*l.* Should it be determined to adopt the Moncrieff system, the cost of the alteration is estimated at 5,886*l.* in addition, and the total cost of the work so completed will be 120,600*l.* There are also outstanding claims from the contractor for this work and the battery, on which we are unable to give any opinion.

Isle of Grain Battery

Description and Armament.

157. This work stands on the shore about 1,000 yards to the southward of the fort which sees into it, and with which it communicates by a covered road. It was designed as an open earthen battery for 14 guns bearing on the entrance of the Medway, and is 900 yards from the nearest point of the deep water channel.

Difficulties of Site.

The difficulties met with in other places on the banks of the Thames and Medway were experienced here to the fullest extent. The subsidence of the rampart, with the bed of concrete forming its heart, has been on an average 5 feet, and in some places as much as 7 feet 9 inches, nor have we any reason to suppose that it has reached its limit. Although the settlement of a bank of earth is of little importance as compared with that of an expensive work of masonry, we are still of opinion that it would not be advisable to add more weight than is absolutely necessary, or to incur much expense upon this work.

Plan for completion.

A plan has been laid before us for completing it as a barbette battery on a temporary arrangement that might afterwards be converted into a permanent one for 10 Moncrieff guns. If any temporary arrangement should be adopted it should, in our opinion, be of such a nature as not to involve the necessity of any extensive removal of the material used in the foundations for the platforms and parapet; but we would rather recommend that the material required should alone be added at present, and that the final formation of the terreplein and parapets should be left until the mode of arming the battery is decided upon, and the effect of the additional weight and its altered distribution has been ascertained. Under any circumstances, it would seem desirable that the plan suggested by Colonel Jervois should be adopted, of making each gun platform independent, and so constructing it as to admit of the adjustment of its level when required, without interfering with the adjacent guns. The subsidence which affected the rampart extended also to the main magazine in a less degree; some serious cracks occurred in the brickwork, and part of the earth above it was removed to reduce the pressure upon it. It is now proposed to make good the defects in the brickwork of the magazine, and to place above it the amount of earth required for its

Recommendations.

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protection Whether the treacherous subsoil will bear this additional weight without subsiding to a degree to endanger the safety of the building may be doubted, and we recommend that as little money as possible should be expended upon the building until this has been ascertained. As regards the powers of resistance, we have to observe that its position within 900 yards of the deep-water channel, and at a height of 25 feet above high-water mark is not favourable for a barbette battery. In the estimates for 1867 provision was made for 14 shields which it is not now intended to supply.

Estimate.

The sum expended on the battery to the 30th June, 1868, amounted to 27,455*l.* The amount estimated as necessary to complete it as a barbette battery is 4,279*l.*, making a total of 31,734*l.* The additional cost of adapting it for the Moncrieff system is 3,400*l.*, and the cost of the work so completed would be 35,134*l.*

GARRISON POINT FORT.

Object of Work.

158. This work is designed for the protection of the narrow entrance of the Medway between the point on which it stands and the Isle of Grain, and brings only a few guns to bear on the approach to the entrance from the Nore. The defence of this approach and of the gorge of the fort against ships attempting to take up a position to the eastward of it will be, as before, chiefly entrusted to the old North-Eastern Sheerness Lines, which, we are informed, are to be re-modelled and armed with heavy rifled guns: as these Lines are not included in the Schedules of the Acts for the Loan for Defences they do not come within the scope of our enquiry, we have only, therefore, to remark that the re-modelling of these Lines is essential to the support of the fort against an attack from seaward. Additional support would be given to it were the work proposed by the Royal Commissioners on the Grain Spit, and recommended by Colonel Jervois, constructed, or the Martello Tower now existing adapted for the reception of one or two heavy guns, to bring a cross-fire on ships approaching the entrance.

Sheerness Lines.

Grain Spit.

Armament.

Garrison Point Fort is a casemated fort for 36 heavy guns in two tiers, protected by iron shields, and preparations are made for two turrets, each to carry two 25-ton guns. No plan has yet been prepared for these turrets, and we cannot therefore say how far the preparations made may be sufficient to bear their weight. Any expenditure that may be necessary to adapt the work for their reception is not provided for in the estimate for completion now given, and it would therefore form part of the additional estimate for providing the turrets.

Report.

The fort is well and solidly built. It is yet to be ascertained what amount of resistance the granite wall and piers, 14′ 6″ thick, would offer to concentrated broadsides of heavy rifled guns; but looking to the amount of fire to which ships attempting to approach the fort would be subjected, and the facilities for applying submarine defences, it is probable that the protection they would afford would be found sufficient.

Modifications.

Since our visit in May, modifications have been made in the designs to bring them into conformity with the most approved plans for the supply of ammunition, and the arrangements, when carried out, will be well adapted for the service of the guns. Here, as at Picklecombe, some provision should be made for screening the men while loading from the effect of the explosion of the heavy charges from the guns immediately above or below them.

Estimate.

In the Schedule of 1862 the estimated cost of this work was 80,000*l.*, at which it remained till 1865 when it was grouped with the other works.

The sum expended on this work to the 30th June, 1868, amounted to 81,067*l.* The sum estimated for completion amounts to 8,162*l.*, making a total of 89,229*l.*

The estimate for iron shields is 61,750*l.*, making the whole cost of the work, when completed, 150,979*l.*

SUMMARY.

Estimate.

159. In the Schedule of the Act of 1862 the estimate for these three works amounted in the aggregate to 165,000*l.* This was raised in 1864 to 180,000*l.*, and in 1867 to 227,000*l.*, exclusive of land and of shields. The cost of the shields was estimated at 58,000*l.*, and the whole cost at 285,000*l.*

The amount is now estimated at 235,677*l.* for the works, and 61,750*l.* for shields, making a total of 297,427*l.*

HOO AND DARNET FORTS.

HOO AND DARNET FORTS.

Recommendation of Royal Commission.

160. The Defence Commissioners recommended the construction of two works capable of mounting 25 guns each, one on Okeham Ness, and the other on the small island to the eastward of it, and that a boom should be placed, at a time of expected attack, between them. It was subsequently determined to construct these works at Hoo and Darnet, two projecting points below Gillingham Reach, commanding the winding channel at that part of the river.

Original Design.

The original design provided two circular forts exactly similar to each other, with basement floor for stores, two tiers of gun casemates, nine on the lower and 16 on the upper floor, all protected by iron shields, with a magazine in each across the centre. This was the approved plan in June 1861, when the first contract was let for excavating to a depth of 10 feet, and laying in a bed of concrete over the whole surface of the forts 8 feet in thickness, enclosed all round by close piling 28 feet in depth.

Preliminary examination of site by boring.

Previously to the work being commenced, borings had been taken to a depth of 18 feet at Hoo, and 28 feet at Darnet. The borings at Hoo showed clay and sand, and those at Darnet the same, but having thin layers of peat intervening between the different strata of clay. In driving the piles previous to commencing the excavations, a difference was found in the subsoil; the piles at Darnet drove too easily, the last blow of the monkey (17 cwt.) driving them 4 or 5 inches; the ground at Hoo was harder, although more variable, some of the piles requiring several blows to drive them 1 inch. On the excavation being made, the soft and yielding nature of the ground at Darnet became further manifest by the piles giving way inwards, and much difficulty was experienced in keeping them perpendicular until the concrete was put in. About this time, 1st October, 1861, an experimental pile was driven in the excavation at Darnet to a depth of 50 feet from the surface of the ground. This pile was driven by a monkey weighing 17 cwt., at an average of nearly 7 inches to each blow, the last blow driving it $5\frac{1}{2}$ inches, and showing that no very material resistance was met with at that depth. In consequence of the difficulties encountered in the excavations, and the knowledge obtained by the pile-driving, it was decided to increase the thickness of the bed of concrete at Hoo from 8 to 10 feet, and at Darnet from 8 to 15 feet.

Difficulties encountered.

Depth of the Foundation increased.

In October 1862, a south-west gale prevailing, the dam surrounding the work at Darnet gave way, and the foundations were filled by a spring tide to a depth of $2\frac{1}{2}$ feet. In November 1862, the contract for the concrete foundations in both forts was completed, and the bed of concrete in each case covered with 12 inches of mud to preserve it from injury, after which the foundations were allowed to rest until the following summer, when preparations were made for the erection of the basement stories of both forts. No sinking was observed during this intervening period. The extra cost of construction entailed by these additional precautions in the foundations, was for Hoo 3,999*l.*, and for Darnet 12,302*l.*

Modification.

161. Previous to the commencement of the basement story, the original design, as approved by the Defence Committee, was departed from by abandoning the central magazines, and making provision for the ammunition in the basement, underneath the guns; this alteration entailed an increased thickness in the outer walls of the forts on the more exposed sides, thus producing an unequal distribution of the weight of the buildings upon the concrete foundations, and also removing weight from the centre of the concreted area, thereby occasioning a tendency in the work to settle outwardly.

Wells.

In May 1863, a well was commenced in Hoo Fort, and in sinking it the concrete was found to be so saturated and porous that the water was just kept under by pumping 4,500 gallons per hour, and in the following October the same thing happened at Darnet.

Basement.

A contract was entered into in May 1863, for the construction of the basement stories of both forts, which were commenced soon after. At this time, no settlement of the concrete had been observed; the Commanding Royal Engineer reported in July 1863, that the upper layers of the concrete were not in good condition, but the lower layers in Portland cement were quite hard. To give additional strength to the work in the basement stories, the footings were built in Portland cement, and hoop-iron bond was inserted throughout the work. The value of these precautions has been illustrated in recent alterations at Fort Hoo, where it has been only possible to cut away any portion of the brickwork at immense labour and cost. The basement stories thus commenced in June 1863, were continued through the winter, though occasionally stopped by frosts. In December, two succeeding spring tides inundated the works at Darnet to a depth of 3 feet 10 inches.

First appearance of Cracks.

On the 16th April, 1864, the work being at a height of about 11 feet above the concrete, cracks were reported in the masonry at Hoo, but none in the concrete. On the 21st April, 1864, when the height of the work at Darnet averaged between 8 and 9 feet, a crack was discovered in the masonry and concrete; water flowed up through the latter to such an extent that an attempt to stop it by cement failed; before the 30th April, two other cracks had appeared, and the three were reported to have united on the surface of the concrete towards the centre of the fort. These cracks at Darnet continued to extend through the summer as the building progressed, while those at Hoo increased but slightly,

MEDWAY AND SHEERNESS.

The cracks in both forts occurred at nearly the same three points, and were no doubt caused by the unequal pressure on the concrete, which had in consequence subsided unequally.

Precautions.

162. Strong bonds, of $1\frac{1}{2}$ inch × $1\frac{1}{2}$ inch iron, were inserted in the granite coping at Darnet, to hold the work together, but as it was found that the movement still went on, it was decided in August to place a belt of iron (8 inches by 1 inch) round the lower course of stone footing. This belt was completed in November 1864, and subsequently, in January, seven tie rods, of $2\frac{1}{2}$-inch round iron, were fixed, radiating from the centre, and secured by clips to this iron belt. At the beginning of September, the work under the contracts for the basement stories of both forts had been nearly completed. From the nature and position of the cracks, it became evident that they were caused by the principal weight of the building being placed too near the outer edge of the concrete, and by inequality in its distribution over the concrete foundation. It was, therefore, determined to equalise the pressure over the whole surface of the concrete of both forts, by weighting their interiors with 3,500 tons of ballast each, and to finish the sea wall and glacis around them, which would serve in some measure as a counterpoise to prevent the mud under the forts from being forced outwards. The ballasting was commenced at the end of October 1864, and the glacis in March 1865. By these means the cracks were prevented from getting worse. The extent to which they had gone had caused the arched entrance gateway at Darnet to open out about 2 inches; another casemate, about the same; and a third about 1 inch, these being the three casemates through which the cracks passed.

Mode of Draining the Concrete.

In March 1866, a syphon arrangement of pipes was introduced at both Hoo and Darnet, with a view to draining the water with which the upper half of the concrete in each fort was saturated. By these means the concrete has been drained, and since kept dry. The water from it was highly charged with lime, and it would appear that the weight of water thus removed from the foundations amounted to from 1,500 to 2,000 tons. These syphons are still in operation, and it is of great importance that they should be carefully maintained, at any rate for some time.

Description of work as it is now in process of completion.

163. In 1867, a modified plan was submitted to, and approved by the Defence Committee, by which a single tier of 11 casemated guns was to be placed on the basement stories, erected at each fort in substitution for the two tiers for 25 guns. In this design the magazine arrangements in the basement have been re-modelled, with the double object of making a more equal distribution of the weight on the foundations, and of adapting them to the latest improvements which have been suggested and approved up to the present time. The superstructure is to consist of one tier of 11 casemated guns of 12 or 18 tons. The diameter of the superstructure is reduced from 186 to 138 feet, thus relieving the outer ring from pressure, and distributing the weight more equally over the whole surface of the concrete. In the course of the summer, under the new contract, above 8,000 tons weight of materials have been added at Hoo in the completion of the basement and the commencement of the gun floor, and no subsidence whatever has taken place. There seems therefore to be no reasonable doubt that the measures now adopted will prove successful, and it is proposed to complete Darnet on the same plan.

Progress of Hoo in the summer of 1868. Success of measures adopted.

Report.

164. A careful consideration of the circumstances stated above, and a close examination of the works, have led us to the following conclusions:—

Unforeseen difficulties in site.

First. That the difficulties occasioned by the loose and yielding nature of the subsoil were greater than the designers of the works had anticipated. At a very early stage of the work the insufficiency of the concrete bed was discovered, and additional thickness and strength were given to it.

Failure of the Foundations.

Second. The subsequent failure of the foundations may be attributed to the weight of the building being placed too near the outer edge of the concrete and to the alteration in the disposition of the magazines, by which the pressure on a portion of the outer ring was increased at the same time that the weight on the centre was removed; thus the equilibrium was destroyed and an unequal settlement took place, causing the cracks in the masonry which have been noticed.

Remedies applied have been judicious.

Third. The measures adopted on the discovery of the cracks appear to us to have arrested the tendency to unequal settlement that had caused those cracks.

Fourth. The death or absence of many of the officers charged with the superintendence of the works in their earlier stages has made it difficult to ascertain the exact amount of subsidence that has taken place since the works were begun, but there is reason to believe that since the remedial measures were completed the settlement has not been great.

We are therefore of opinion that if great care be taken in executing the works and in maintaining during their progress, as far as practicable, an equal pressure on all parts of the foundation, there is little reason to apprehend any further failure of such a nature as to interfere with the practical utility of the work, and the completion of the forts on the proposed plan may therefore be proceeded with.

Little probability of further failure.

165. We have also had under our consideration the probable power of resistance that these forts would oppose to an attack by heavily armed iron-clad ships, as well as their powers of offence. Although it may be doubted whether granite piers would afford the same protection as iron walls, such as those now under consideration for other sea forts, we are of opinion that in the position occupied by these forts, forming an inner line of defence to the Medway, commanding a narrow winding channel easily protected by torpedoes, they would in all probability be found sufficient to resist any attack that might be made upon them, and that it is not necessary to incur the heavy additional expense which the substitution of iron for granite would involve.

Offensive and defensive capabilities.

The number of guns to be mounted in each fort has been reduced from 25 to 11, but their offensive power and the weight of metal thrown by them has been much increased by the substitution of heavy rifled guns for the 68 and 110-pounders originally contemplated, and if 18-ton 10-inch guns are mounted in the embrasures bearing on the channel, it would be difficult for any ship to approach the forts without suffering such damage as would probably compel her to retire.

Armament.

166. We are therefore of opinion that the fort should be completed as proposed, with such slight modifications as may be necessary to adapt the internal arrangements for the supply of ammunition and the service of the guns to the latest and most approved system.

Recommend the Forts to be completed.

The estimate for the completion of the Hoo Fort laid before us amounted to 26,388*l.* In this estimate we found that no margin was left for contingencies beyond two sums of 250*l.* for probable amount of extra work, and 436*l.*, being 10 per cent. on the amount estimated for work not included in the contract. We think it would be imprudent to calculate on the contingencies not exceeding these two sums; at the same time, looking at the amount of work already done, we consider that it will not be necessary to add the full amount for unforeseen contingencies of 10 per cent. (usually charged) on the whole contract, and that an addition of 5 per cent. will be sufficient to meet any extra demands that may arise.

Estimate. Fort Hoo.

In the case of Darnet, where the failures have been more serious, and less work ha been done, we think that the full amount of 10 per cent. should be added.

In 1862 the estimate for the Hoo Fort was 50,000*l.*, and for Darnet 59,000*l.*; they both remained at the same amount till 1867, when the combined estimate for the two forts was increased from 109,000*l.* to 128,000*l.* The estimated cost of the shields in 1867 was 22,000*l.*, making the total estimated cost of the works when completed 150,000*l.*

The expenditure to the 30th June, 1868, at Hoo, was 36,807*l.*; the further sum required 27,540*l.*; together amounting to 64,347*l.* The estimated cost of the shields is 15,950*l.*, and the total cost of the work when completed 80,297*l.*

The expenditure on Darnet to the 30th June, 1868, amounted to 43,485*l.*; the further sum required to complete is 32,204*l.*; together amounting to 75,689*l.* The estimated cost of the shields is 15,950*l.*, making the total cost of the work when completed 91,639*l.* The total estimate for these works without shields will be 140,036*l.*, with shields 171,936*l.*, showing an excess on the estimate of 1867 for the works of 12,036*l.*, and for shields of 9,900*l.*

Fort Darnet.

SUMMARY.—SEA DEFENCES.

167. The total cost of the Sea Defences of the Medway and Sheerness was estimated in 1867 at 355,000*l.*, and 60,000*l.* for shields, or 415,000*l.* in all. The cost of the works when completed, it is now estimated, would amount to 375,713*l.*, and 93,650*l.* for shields, making the total cost 469,363*l.*, or 54,363*l.* in excess; of this amount 33,650*l.*, it will be seen, is due to the increased cost of the shields.

Estimate.

LAND FRONT OF SHEERNESS.

Queenborough Lines.

Queenborough and Cheney Batteries.

Description of Lines.

168. The Queenborough Lines consist of a rampart having a command of 10 feet over the country in front, with a wet ditch 75 feet wide at top, and 6 feet below the ground level. The lines run across the Minster Marshes, which intervene between the town of Sheerness and the high ground between the towns of Queenborough and Minster. The ditch forms a straight line, and the rampart towards the centre is broken into two flanks for three guns each.

Inundation.

The marshes are about 2 feet below high water mark, and are intersected by a network of ditches and drains which would render it quite impassable if covered with even a few inches of water, which might be done by cutting through the sea or river embankments, while the line of rampart will act as a dam to prevent the extension of the inundation to Mile Town and Sheerness.

Subsidence.

During and subsequent to the construction of the lines, a subsidence of the stratum on which the rampart rested, appears to have gone on, being apparent in the unequal settlement of two expense magazines, not, however, to an important degree.

Towers.

At each extremity of the line it was intended to construct a tower for the reception of a two-gun turret. These towers would strengthen the weak points of the line, viz., their flanks, and will co-operate with the works already described, in the defence of the Medway.

Alternative Plan.

169. An alternative plan for the substitution of three guns mounted on Captain Moncrieff's system, for each two-gun turret, has been laid before us.

Remarks.

In the case of these batteries, at either flank of the Queenborough Lines, it is so essential that the guns should be capable of traversing, in order that they may be used as occasion may require either to flank the lines on the land side, or the beach, or to fire to seaward, that the necessity of a turret has always been recognised, and the designs provide for mounting no other guns than those in turrets. The turrets, therefore, form an integral part of the defence, and are not mere additions, as at Garrison Point, the Breakwater Fort, and elsewhere, which may be added or not, as thought desirable to existing batteries. Their approximate cost has, therefore, been included in the estimates, although no design has yet been decided upon for their construction.

The greater simplicity of construction, and economy, point to this as an advantageous position for the application of the Moncrieff system.

Estimate.

There has been expended at the Queenborough Lines, up to the 30th June, 1868, 18,586*l.*, and a further sum of 320*l.* is required to complete, making a total estimated cost of 18,906*l.*

The batteries at Cheney and Queenborough have not yet been commenced.

Queenborough Battery, if constructed for the reception of a two-gun turret, will cost 10,853*l.*, exclusive of a probable further amount of 20,000*l.* for the iron turret, raising the total, when complete, to 30,853*l.* If the adoption of Captain Moncrieff's carriage is decided upon, the cost of completing the three-gun battery will be 14,877*l.*

For Cheney Rock Battery the estimates will stand as follows :—

	£
Estimate for completion, excepting turret	10,528
Add probable cost of turret	20,000
Total estimated cost, with two-gun turret.. ..	30,528
Estimated cost of work completed for three guns on Moncrieff carriages	13,826
The estimated cost of this group of works in the Schedule of 1867	40,000

The present estimates, if the batteries are prepared for turrets, but exclusive of the cost of the turrets, is 40,287*l.*; with turrets the amount will be 80,287*l.*

If completed for Moncrieff gun carriages, the total cost will be 47,609*l.*

GENERAL SUMMARY.

170. The estimate of the Defence Commissioners for the works recommended by them for the protection of Sheerness and the Medway amounted to 450,000*l.*, including 50,000*l.* for the purchase of land.

In 1860 the Government, by omitting the Grain Spit Fort, reduced this estimate to 350,000*l.*

The expenditure on land has amounted to 62,714*l.* In 1862, after separating the cost of the works from that of the land, the estimates for the works amounted in the aggregate to 314,000*l.*, and, adding the cost of the land, to 375,726*l.* In 1864, the estimate for the works was increased to 329,000*l.*, and in 1867 again increased to 395,000*l.*, with 80,000*l.* added for shields—making a total estimate of 475,000*l.*

The estimate now amounts to 416,000*l.* for the works, 40,000*l.* for the turrets for Queenborough and Cheney Batteries, and 93,650*l.* for shields—making a total of 549,650*l.* Should the Moncrieff gun-pits be adopted for the batteries named, the cost of the works will amount to 432,608*l.* and with shields to 526,258*l.*

The defence of the Medway and Sheerness, including the cost of the land, will amount to 612,364*l.*, or above 150,000*l.* beyond the estimate of the Commissioners. This increase appears to be due to the great cost of the foundations, a larger amount paid for land, the rise in the price of labour and materials, and the adoption of costly iron shields.

Dover.

DOVER.

Recommendations of Royal Commission.

171. When the Royal Commission was appointed in 1859, certain improvements in the very imperfect fortifications at Dover had already been sanctioned by Parliament and commenced.

The Commissioners in their Report stated that the questions that arise at Dover were in some respects dissimilar from those that had been discussed in treating of other places. They considered that "it is in fact the only place in England which partakes of the nature of a strategical fortress or intrenched camp in its primary object."

"The objection" (referred to in the opening part of their Report) "to the construction of fortifications purely for strategical purposes applies, therefore, in some respects to Dover; and if there were no works of defence or military establishments there already," it appeared to the Commissioners "that it would become a question whether that place should or should not be fortified." Weighing the reasons for fortifying it, and bearing in mind the extensive, though imperfect works of fortification already existing at Dover, and the improvements already sanctioned by Parliament, they were of opinion "that no other course was open but to complete the works in progress, and give them such additional strength as may be considered necessary to render them secure."

They therefore recommended that the plans authorized, which appeared to be well-devised, should be carried out, and that in addition a new work should be constructed on the hill overlooking the Castle.

The works in existence consisted of—

Works existing in 1859.

1. A citadel and a small fort called the Drop Redoubt, on the Western Heights above the town, partly connected by lines left unfinished; and an old fort called Archcliffe Fort, close to the shore below the Citadel, and also connected with it by a line.

2. The Castle, on the Eastern Heights, with a small battery at the foot of the cliff below it, called Guildford Battery.

Works carried out or in progress under Loan for Defences.

The additions and alterations authorized and approved by the Commission, and since carried out or in progress, are—

1. The addition of an outwork to the West of the Citadel.

2. The completion of the casemated officers' quarters, and sundry smaller works in the Citadel.

3. The completion, in an approved form, of the lines between the Citadel and Drop Redoubt, and the addition of a bastion in the centre, called the North Centre Bastion.

4. Re-modelling the Drop Redoubt, and constructing lines to the eastward of it.

5. Constructing the South Lines and South Entrance, with barracks on the South Front.

6. Re-modelling the East Front of the Castle Heights, and constructing casemates for 72 men.

7. A new work on the hill overlooking the Castle.

GENERAL REPORT.

172. We are of opinion that the works generally have been well constructed as regards permanency and stability, that the slight failures which have occurred are not more in number, or greater in extent than might have been reasonably anticipated, and that these failures have been satisfactorily remedied.

That they have been well and skilfully constructed with reference to arrangements for the service of the guns for which they were designed, but that for the requirements of a modern armament the re-modelled works generally, though containing sufficient storage for powder are insufficiently provided with expense magazines and artillery store accommodation. In accordance with the system adopted generally for the land defences, it is not intended to provide racers for the guns, or cut the embrasures until the necessity for them arises. The works have been sufficiently advanced for a peace establishment, and any further expenditure required to complete them or to supply the deficiencies would not form part of the charge against the Loan, and may be left to be provided out of the Annual Estimates, or till the fortress has to be mantled at a time of expected attack.

The batteries on the sea front have been constructed for guns of less power than those which at the present time are alone considered adequate to contend with shipping, and if they are to be re-armed will require to be re-modelled. DOVER.

173. The resisting power of these works must be considered with reference rather to any attempt that might be made by an enemy to obtain possession of the strong ground commanding the harbour and roadstead than to an attack from the sea, from which indeed in most of them their height above the water affords sufficient protection, and with reference to the resistance which they would be capable of offering to such an attempt, we are of opinion that when the works have been completed and mantled, the defences newly-constructed as additions to those previously existing will have rendered Dover so strong that, if properly armed and adequately garrisoned, it ought to be capable of sustaining a lengthened siege requiring the development of very powerful means of attack, and that until taken it would effectually deny the use of the harbour and roadstead to an enemy, though it could not prevent injury to the town and shipping by a bombardment from the sea. Powers of Resistance.

Some protection against such a bombardment would have been afforded by the 16 heavy guns intended to be mounted in Archcliffe Fort and Guildford Battery behind iron shields, for which provision was made in the Estimates and Schedule of 1867. These shields are omitted from the estimates now submitted to us, and we are informed that guns mounted on the Moncrieff principle will be substituted for them, and the cost of adapting the batteries to them will be provided for in future Annual Estimates. We have only to observe that we consider it essential that some heavy guns should be mounted on the sea front, as without them the fortress will be unable to afford any protection to the town or harbour from bombardment or insult, even by a single armour-clad ship.

In case of attack by land, the fortress would be much strengthened by the addition of a continuous line connecting the Eastern and Western Heights; but as the formation of such a line would cause the destruction of much valuable property, and be attended with a very heavy expense, we are of opinion that no step should be taken beyond the preparation of a well matured plan, to be carried into execution without delay when the emergency arose.

Western Outwork.

174. This work is for land defence; it has casemated accommodation for three officers and 181 men, and is intended for an armament of 27 guns on the terreplein, and 14 in its caponnières and casemates. WESTERN OUTWORK. Design.

During some severe weather in 1866, the counterscarp wall of the South Cut gave way; it had been constructed in rubble chalk, with brick and flint facing, built in stone lime mortar; it was replaced by a Portland cement concrete wall, at a cost of 622*l*. In other respects the work appears to have been well and skilfully constructed with reference to its stability and permanency. Report.

The expense magazine and artillery store accommodation is scarcely sufficient for the number of guns it is intended to mount. In other respects the construction is adapted to meet the requirements of a modern armament.

The total cost of this work was 86,143*l*., of which 62,419*l*. was paid out of the Loan for Defences. Cost.

The Citadel.

175. The works performed in the Citadel were limited to the completion of the officers' casemated barrack, deepening ditches, heightening escarps, forming a glacis, constructing galleries and bridges of communication, &c. CITADEL.

There was a slight failure in an escarp wall after the severe weather of 1866, which was remedied; the work appears to have been well and skilfully constructed with reference to permanency and stability. Report.

There is a deficiency of expense magazine and store accommodation; in other respects the construction is adapted to meet the requirements of a modern armament for land defence.

The total cost of the new works in the Citadel has been 61,486*l*., of which 34,560*l*. has been charged to the Loan for Defences. Cost.

North Centre Bastion and North Entrance.

North Centre Bastion and North Entrance.

176. The North Centre Bastion was designed as a flanking work to the long line between the Drop Redoubt and the Citadel. It is intended to mount 15 guns on terreplein, and six guns in flanking casemates.

The works at the north entrance consist of an advanced ditch and glacis, with flanking casemates. They were commenced in March 1860, and completed in February 1864.

Report. In 1866 it was found that the escarp wall of the North-East Bastion was being thrust forward. Remedial measures were at once taken which, at a cost of 1,366*l.*, saved the fall, rendering it unnecessary to take it down. The work has since been completed; no further movement of the wall has taken place, and it now appears to be perfectly secure.

The works are well and skilfully constructed with reference to permanency and stability.

Cost. Their total cost amounted to 52,251*l.*, of which 38,017*l.* were charged to the Loan for Defences.

Drop Redoubt and East Lines.

Drop Redoubt and East Lines.

177. The new works here consist of four caponnières at the angles, bombproof quarters for the officers, a ditch and lines connecting the Redoubt with the Drop Battery, and a magazine for the latter. They were commenced in October 1859, and completed in February 1862.

Report. The works have been well and skilfully constructed, with reference to permanency and stability. They are constructed for 17 guns on terreplein, and 15 in caponnières.

The magazine is not sufficiently protected from direct fire.

One face of the battery bears on the sea, and might take part in the defence of the place against ships. To enable it to do so with effect, heavier guns than those for which it was designed would be necessary; and should it be determined to re-arm it, considerable alterations would be required in the battery, as well as additional magazine accommodation. The new work is otherwise well adapted to its object.

Cost. The total expenditure on alterations and additions amounted to 37,577*l.*, of which 13,276*l.* were charged to the Loan for Defences.

South Front Barrack, South Entrance, and Lines.

South Front Barrack, South Entrance, and Lines.

178. These works comprise a casemated barrack for the wing of a regiment; scarps and ditches to the South and South-West Lines, with gun casemate and guard-rooms at the entrance.

They were commenced in October 1861, and completed in June 1863.

Report. These lines have been designed chiefly for land defence, and for that purpose the works as now constructed are, with the exception of insufficient expense magazine and store accommodation, suited to the requirements of a modern armament.

They are intended to mount 18 guns on terreplein, and 12 in casemates, with barrack accommodation for 14 officers and 436 men. In some of the positions the guns would bear on ships approaching the harbour, and heavier guns than those now provided would be required to act with effect against them; and a revision of the armament would make considerable alterations necessary, both in the works and in the magazine accommodation.

Cost. The total cost of the alterations and additions amounted to 54,520*l.*, of which 48,425*l.* were paid out of the Loan for Defences.

Summary.

179. The estimate in the Schedule of 1862 for the works on the Western Heights amounted to 149,000*l.*, which was increased to 191,000*l.*

The total expenditure on the Western Heights has been:—

	Annual Estimates.	Loan.	Total.
	£	£	£
Drop Redoubt	24,301	13,276	37,577
North Centre Bastion ..	14,234	38,017	52,251
Western Outwork	23,724	62,419	86,143
South Front and Entrance .	6,095	48,425	54,520
Citadel	26,926	34,560	61,486
Total	95,280	196,697	291,977

Castle Heights.

180. The only sum expended out of the Loan on the Castle Heights amounted to 6,583*l.*, for providing casemated barracks for 72 men under the East Front Ramparts. The work has been well done, and calls for no remark.

Castle Hill Fort.

181. This is the only new work at Dover, and wholly charged to the Loan for Defences.

Design.

It occupies a site about 400 feet above mean tide level, on the same ridge as the Castle, and 700 yards distant from it. The ditches are 35 feet in width at bottom, flanked by one double and three single caponnières, all of two tiers. The gorge ditch forms a re-entering angle with casemated flanks for guns and musketry. The scarps and counterscarps are in chalk, protected by a facing of concrete and flint work, and well defiladed. There is a chemin des rondes, as well as a covered way. The average height of the crest of the parapet is 434 feet. 29 guns can be mounted on the ramparts, of which six will be in haxo casemates; at the right of the gorge, two guns on the parade level will flank the ditch, connecting the East Wing Battery with the main work; 26 smaller pieces will be placed in the caponnières and flanking batteries.

In rear of the flanks of the work, and about 300 yards distant from it, are the East and West Wing Batteries, for five and four guns respectively, with the requisite magazine accommodation. These batteries are secured independently by ditches, and are connected by lines with the main work.

There are bombproof casemates under the main ramparts of the fort for seven officers and 270 men, and the aggregate capacity of the magazines is for 3,672 barrels of powder.

Report.

This work was commenced in June 1861, under a contract for the erection of the casemated barracks; it is now being completed by military labour, and is well and skilfully constructed, with reference to permanency and stability.

There have been some slight failures, requiring an outlay of 770*l.* in repairs; a more serious outlay was caused by the occurrence of large clay "potholes," and of a want of compactness in the chalk, making it necessary, in places, to revet both scarps and counterscarps with concrete, at an additional cost of 11,807*l.*

All the arrangements for the service of the guns, for the supply of ammunition, and for stores, are good.

Estimate.

The estimate for this work in the Schedule of 1862 was 90,000*l.* In 1863 it was reduced to 80,000*l.*, and subsequently merged in the general estimate for Dover.

The expenditure on the work, to the 30th June, amounted to 77,716*l.*; and a further sum of 10,337*l.* will be required to complete it, making the total cost of the work 88,053*l.*

GENERAL SUMMARY.

182. The cost of the works at Dover was estimated by the Commissioners at 165,000*l.* for works in progress, and 170,000*l.* for the new works recommended by them. Of this total of 335,000*l.*, 80,000*l.* were voted in the Annual Estimates for 1860-1, leaving 255,000*l.* to be provided out of the Loan. The expenditure on the Annual Votes prior to the Loan amounted to 95,280*l.*

The expenditure on the land has amounted to 1,141*l.*

The estimate for the various works under the Loan in the Schedule of 1862 amounted to 249,000*l.*; in 1863 this amount was increased to 278,000*l.*, and in 1867 to 285,000*l.* It was also at that time, as we have stated, proposed to provide shields for Archcliffe and Guildford Batteries, estimated to cost 16,000*l.*—making a total estimate of 301,000*l.*

It is now intended that any expenditure on the re-modelling of these batteries should be defrayed from the Annual Votes, and no provision for them is included in the Estimates. The expenditure under the Loan is now estimated at 291,333*l.*, and the total cost of the re-modelled and new works, including the purchase of land, will amount to 387,754*l.*

CORK.

Cork.

Recommendations of Defence Commission.

183. In the Report of the Royal Commission it was recommended that the land defences of Forts Carlisle and Camden should be re-modelled, and a sufficient space enclosed to admit of an extension of the sea batteries on the harbour face so as to afford a reverse fire on ships passing up the channel, and that more guns should be brought to bear on the approach to the harbour; and that the existing works on Spike Island should be completed, and additional guns mounted on the southern face bearing on the harbour and entrance.

They further recommmended the occupation of Cork Beg by a small work; the re-modelling of an old battery under the hospital at Queenstown, and the construction of a small open battery on White Point.

These last three works have not been included in the Schedules of the Acts for the Loan Defences.

The forts at Spike Island, Carlisle, and Camden, when completed, armed, and adequately manned, will, if combined with submarine defences, fully provide for the security of Cork Harbour against an attack by naval means alone.

Spike Island.

Spike Island.

Completion of Fort Westmoreland.

184. Fort Westmoreland, a work already existing on Spike Island, was adopted by the Defence Commissioners, who recommended that it should be completed and prepared for an increased armament. The amount estimated as necessary for this purpose, based on the work being entirely done by convict labour, was 10,000*l.*, and the expenditure up to 1864 amounted to 2,000*l.*

Batteries.

Present Design.

In June 1864, a plan was approved for preparing the work for an armament of 30 guns, 18 bearing on the entrance, and 12 on the harbour. That plan has now been revised, to adapt it for a heavier armament, and 16 guns behind shields or on Moncrieff carriages are to take the place of the 30 originally intended. The traverses and magazines occupy the places originally designed for them.

Up to 1867, the work was carried on by convict labour, but in the course of that year the whole of the convicts were transferred to the Admiralty, and the work was practically suspended till February 1868, when the revised plans were taken in hand by military labour, the number of men employed being very small.

Report.

Character of Work.

No failures have occurred, the work already done is good, and the design seems to be well adapted to secure permanency and stability, as well as to offer resistance to any attack that may be made upon it. No provision is made for arming the curtain between Nos. 2 and 3 Bastions, bearing directly on the entrance of the harbour. Four additional heavy guns in that position would materially increase the offensive power of the fort against ships attempting to force an entrance, and in our opinion the work should be so completed as to admit of this curtain being armed. The arrangements for the service of the guns are satisfactory.

Service of Guns.

Estimate.

The estimate for the work was, as we have said, based on the employment of convict labour, and will be quite inadequate to meet the expense of completing it by military or civil labour. The amount already expended is 4,618*l.*, and the further sum required to complete it amounts to 12,695*l.*, making a total of 17,313*l.*

The cost of the shields is estimated at 24,000*l.*, making the total cost of the work 41,313*l.* The cost of adapting the alternative plan for mounting the guns on Moncrieff carriages is estimated at 5,764*l.*, and the total cost of the work so completed would amount to 23,077*l.*

Carlisle Fort.

Carlisle Fort.

Land Defences.

185. The first work begun under the Loan was Carlisle Fort.

The land defences consist of a line of rampart enclosing the sites of the various batteries with a ditch 40 feet wide and 30 feet deep, cut in the natural rock, and flanked by caponnières, and casemates in the escarp; there is also a covered way. The highest point of the rampart is 264 feet above the sea. The designs were made in 1860, and a

Cork.

contract was entered into for the excavation of the main ditch, and formation of the parapet. The works were begun in August 1861. In February 1863 the contractors became bankrupt, and the work was carried on by persons employed by the trustees of the bankrupts, and in September of that year they were relieved from the task by the War Department.

Keeps.

Sea Batteries.

The further works which have been proposed to carry out the recommendations of the Commissioners may be thus described :—The original fort, with slight modifications, will form the Keep; and Rupert's Tower, reduced in height, will be utilized to cover the ground on the flank and rear of the Southern Battery, which cannot be seen from the Keep. The Centre and Southern Lower Batteries will be completed for the reception of 16 guns behind shields, or on Moncrieff's carriages, disposed in groups varying from 60 to 190 feet above mean tide level. No plan has been proposed for re-modelling the two Northern Lower Batteries, constructed previous to the Loan for 11 guns, and no sum for such re-modelling has been included in the estimates before us.

Progress.

From 1864 to 1867 the works were carried on slowly by convict labour, 180 men being the largest number employed. In October 1867, a party of soldiers of the Line commenced work, and in December the whole of the convicts were transferred to the Admiralty works at Spike Island ; from that time military and civil labour alone have been employed. Up to the present time nothing has been done beyond excavating the sites of the batteries and communications and building the magazines.

Report.

Character of Work.

The work, as far as it has gone, has been well and solidly constructed. The design laid before us appears well adapted to secure permanency and solidity, and to give to the work the power of resistance required in this important position. In the design it is proposed to close each extremity of the main ditch by a wall; this wall would cost 1,300*l.*, and this expenditure appears to us to be unnecessary, except so far as it may be required to provide against the encroachment of the sea, and we recommend that it should be confined to that object. The entrance to the fort on the land side is carried in nearly a straight line through the defences, and requires some modification or protection.

Service of the Guns.

The arrangements for the magazines and for the service of the guns are good.

Estimate.

In the various schedules, the estimated cost of this work, based on the employment of a considerable amount of convict labour, was 79,000*l.* ; convict labour cannot now be obtained, and although in the modification of the plans considerable reductions have been made, that sum will be quite inadequate to its completion. The expenditure incurred to 30th June, 1868, amounted to 27,627*l.*, and the further sum required to complete, including liabilities, amounts to 59,872*l.*, making a total of 87,499*l.* The cost of the shields is estimated at 24,000*l.*, making a total cost of 111,499*l.* The alternative plan for substituting the Moncrieff system for the 16 guns protected by shields has been laid before us. The cost of adapting the work for this alteration would be 6,556*l.*, and the total cost of the work so completed would be 94,055*l.*

Fort Camden.

Fort Camden.

Land Defences.

186. The new land front, consisting of a ditch and rampart similar to those at Carlisle, was begun in February 1862, under a contract for building casemated barracks on the north flank and making a road to Crosshaven ; after much delay this contract was completed in September 1864. In February 1865 a second contract, on a schedule of prices, was entered into for the completion of the land front, and whatever other work might be ordered. The work under this contract was not satisfactorily done, and in February 1867 the contract was wound up, and the work has since been carried on by military labour.

Present Design. Land Defences. Sea Batteries.

The project for completion has now been considerably modified. The land front is unaltered, except in very slight details. The lower battery, adapted for 10 guns behind shields, or eight Moncrieff guns, will extend along the sea front, and include the site now occupied by the old battery; above it two batteries *en barbette* for three guns each are designed on each side of the existing officers' quarters, at a height of 170 feet above the sea. To secure the position against an enemy who might have made good a landing below, a scarp with a slight ditch will be cut in the rocky slope between the Upper and Lower Batteries ; this obstacle, which we consider will afford sufficient protection, has been substituted at our suggestion for the more expensive proposal of a ditch 20 feet deep, shown on the original plan. It has also been proposed to remove the present officers' quarters to another position, and to add another three-gun battery on their site. The cost of this would amount to 8,700*l.*, but it is not now intended to propose this additional expenditure.

Defensive enclosure on sea side.

Cork.

Report.

Character of Work.

Service of Guns. Estimate.

The work already done is solid, and no failures have occurred; and the design laid before us seems well adapted to secure permanency and stability, and to give the necessary power of resistance. It will be necessary to make provision for raising water from the spring at the lower battery to the level of the upper parade, or for otherwise obtaining a supply. The amount estimated for this purpose will probably be found sufficient. The arrangements for the magazines, and for the service of the guns, are satisfactory. The estimated cost of this work in all the schedules is 70,000*l.* The expenditure up to the 30th June amounted to 32,334*l.*, and the further sum required to complete, is estimated at 35,897*l.*, making a total of 68,231*l.*

The cost of the shields is now estimated at 15,000*l.*, and the total cost of the work at 83,231*l.* The alternative plan for substituting eight guns on Moncrieff carriages for 10 guns behind shields has been laid before us; the cost of adapting the work to this system would be 2,696*l.*, and the total cost of the work so completed would amount to 70,927*l.*

GENERAL SUMMARY.

Estimate.

187. The cost of the works for the defence of Cork Harbour, recommended by the Defence Commissioners, was estimated by them at 120,000*l.*, including the purchase of land, and this amount was adopted by the Government in the Parliamentary Paper of 1860, No. 448. The estimate in the Schedule of 1862 amounted in the aggregate to 159,000*l.*, exclusive of land. The cost of the land amounted to 3,160*l.* In 1867, 30,000*l.* was added to this sum as the estimated cost of the shields required, making a total cost of 189,000*l.* The estimated cost of the works, when completed, is now 173,043*l.*, with 63,000*l.* for shields, making a total of 236,043*l.* If completed for the Moncrieff system, the total cost will amount to 188,059*l.* The increased cost of the works beyond the original estimate is to be attributed to the withdrawal of convict labour from Spike Island and Fort Carlisle. The excess which would thus be caused on the forts, if completed for shields, will be more than covered if the Moncrieff system be adopted.

LANDS AND INCIDENTAL EXPENSES.

Lands.

188. The estimate in the Schedule of 1862 for the purchase of land was 1,030,000*l.*, at which amount it remained until 1865, when it was increased to 1,080,000*l.* It was further increased in 1867 to 1,115,000*l.*, but according to the estimates now before us will be reduced to 1,102,033*l.* This reduction is stated to be due to the outstanding claims in 1867, having been settled for a less sum than then expected. It is to be observed that this large expenditure is not unproductive, but has been stated as yielding a very considerable revenue.

Incidental Expenses.

189. In the Schedule of 1862 the item for Incidental Expenses was estimated at 50,000; this was increased in 1863 to 120,000*l.*, in 1865 to 140,000*l.*, and again in 1867 to 165,000*l.* According to the estimates now before us this estimate has been increased to 194,835*l.*, showing an increase of 29,835*l.* This estimate, however, does not show the total expenditure on this item, which is mainly for the payment of the staff and other incidental expenses of a like nature connected with the works under the Loan, as under the authority of the Treasury, this expenditure, as well as that on lands, is subject to reduction by the amount received from the sale of timber, rents, and certain other credits.

SUMMARY.

Summary

Conclusion.

190. We have now gone in detail through the whole of the works on which we are directed to report, and we have in each case stated our opinion of their construction and power, and it now only remains for us shortly to sum up the results of our enquiry.

Circumstances under which the works were commenced.

We have stated the circumstances under which the works were commenced, and the measures that were taken for carrying into effect the recommendations of the Defence Commissioners, so far as they were adopted by the Government, and as they were embodied for the first time in a detailed estimate in the Schedule of the Act of 1862.

Stability and Permanency.

191. Bearing those circumstances in mind we are of opinion—

1st. That the works have been constructed with a due regard to the conditions necessary to secure their stability and permanency; and although it could not be expected that works of such magnitude could be carried on without occasional failures and mistakes, those failures and mistakes have been much fewer and of less importance than might have been anticipated.

Costly changes in designs.

192.—2nd. That many costly changes from the original designs were rendered absolutely necessary by the great advance in the power of rifled artillery; that great skill has been shown in adapting the original designs of the works to the altered circumstances of the times; that the arrangements for the service of the guns are good; and that the increase of resisting power in the works has kept pace with the increase of the power of the guns.

Resisting Power.

Increased cost.

193.—3rd. The increase of cost has been very great; by the Table at page x. it will be seen that the estimate of 1862 amounted to 6,860,000*l.*, from which must be deducted the sum of 670,000*l.* for works since omitted, leaving 6,190,000*l.* The expenditure as now estimated will be 7,951,437*l.*, showing an excess of 1,761,437*l.* on the works now in progress. The amount under the Loan sanctioned by Parliament in 1862 having been 6,860,000*l.*, the increased demand will now be 1,091,437*l.*; part of this increase is due to the additional strength proposed to be given to iron structures since 1867.

Comparison of Estimate of 1862 and 1869.

Increase since 1867.

Rise in wages and cost of materials.

The increase since 1862 is not wholly due to the changes in the works alluded to, a portion of it is to be attributed to a considerable rise in wages and in the cost of materials that took place in the earlier part of the interval.

Alternative plans.

194.—4th. It is to be observed that in the Schedule attached to our Report the estimates we have adopted are for the plans for the expensive iron structures and not for the alternative plans that have been laid before us. We have thought it right to follow this course since in most cases the adoption of the alternative plans is dependent upon the success of the application of the Moncrieff system to the heavier guns. Without casting any doubt on that ultimate success we felt that it would not be right to assume it as certain, and to adopt estimates which, in the event of its failure, would be found inadequate to complete the works.

Saving by adoption of Moncrieff system.

By a reference to Table viii. in the Appendix it will be seen that the saving consequent on its adoption is estimated at 194,159*l.*, and thus the amount required from the Loan would be reduced to 7,757,278*l.*; against this saving must be put some increase of the cost of the armament arising from the increased cost of the carriages. No reliable data can yet be given for comparing the cost of these carriages with others that may be adopted; we do not therefore attempt to fix any sum as the amount of increased cost under this head.

Amount expended under the Loan.

Further sum required.

195.—5th. The sum expended under the Loan to the 30th June last amounted to 3,878,970*l.* for works, and 1,239,868*l.* for land and incidental expenses, making a total of 5,118,838*l.* The total amount required to complete the works, is now estimated at 2,832,599*l.* The excess on the estimate of the Act of 1867 will be 481,437*l.*

Adequacy of Estimates.

196.—6th. Lastly we believe that the estimates laid before us have been most carefully prepared, and that they will be found adequate to complete the works in accordance with the designs on which they are formed.

FRED. WM. GREY, *Admiral,*
President.

C. DICKSON,
Major-General.

J. L. A. SIMMONS,
Major-General.

H. D. HARNESS,
Colonel, R.E.

T. ELWYN,
Colonel, R.A.

JOHN HAWKSHAW,
C.E., F.R.S.

J. C. ARDAGH, *Lieut. R.E.*
Secretary.

109, Victoria Street,
28th April, 1869.

COMMITTEE ON FORTIFICATIONS.

SCHEDULE

SHOWING the Payments made on each work up to the 30th June, 1868; the Further Amount required to complete, including all liabilities; the present Estimated Cost, exclusive of Iron Shields; the Approximate Cost of the Shields; the Estimated Cost, inclusive of Shields; the Estimated Cost of Each Work under the Loan for Defences in the Fortifications Act for 1867, 30th and 31st Victoria, cap. 145; the Sums charged to other Votes; the Miscellaneous Expenses; and the General Totals.

109, VICTORIA STREET,
April 1869.

SCHEDULE showing the Payments made on each work up to the 30th June, 1868; the Cost, exclusive of Iron Shields; the Approximate Cost of the Shields; the Loan for Defences in the Fortifications Act for 1867, 30th and 31st Victoria,

1 Station, District, and Name of Work.	2 Payments on each of the works up to 30th June, 1868.	3 Further Amount required to complete each work, inclusive of all liabilities, excluding Shields.	4 Estimated Cost of each work on 31st Dec., 1868, excluding Shields.	5 Approximate Estimate of Cost of Shields.	6 Estimated Cost of each Work, including Shields.
PORTSMOUTH.	£	£	£	£	£
SEA DEFENCES.—OUTER LINE.					
1. Horse Sand Fort	115,834	308,860	424,694	..	424,694
2. No Man's Land Fort	152,937	309,563	462,500	..	462,500
3. Spit Bank Fort	45,101	114,399	159,500	7,800	167,300
And other Works	10,074	..	10,074	..	10,074
4. St. Helen's Fort	47,779	70,332	118,111	5,200	123,311
5. Puckpool Battery	16,840	4,024	20,864	8,100	28,964
SEA DEFENCES.—INNER LINE.	388,565	807,178	1,195,743	21,100	1,216,843
6. Gilkicker Mortar Battery ..	..	8,800	8,800	..	8,800
7. Gilkicker Battery	45,984	15,411	61,395	38,725	100,120
8. Southsea Batteries	29,294	11,460	40,854	35,025	75,879
9. Eastney Batteries	17,435	..	17,435	..	17,435
10. Lumps Battery	4,219	..	4,219	..	4,219
DEFENCES OF THE NEEDLES PASSAGE.	97,032	35,671	132,703	73,750	206,453
11. Hurst Castle	97,832	22,989	120,821	88,450	209,271
12. Needles Battery	6,958	698	7,656	..	7,656
13. Hatherwood Battery	4,581	1,244	5,825	..	5,825
14. Warden Point Battery ..	11,746	1,153	12,899	..	12,899
15. Cliff End Batteries	18,129	14,585	32,714	..	32,714
16. Golden Hill Fort	32,476	5,546	38,022	..	38,022
ISLE OF WIGHT.—COAST DEFENCES.	171,722	46,215	217,937	88,450	306,387
17. Bembridge Fort	44,362	2,423	46,785	..	46,785
18. Redcliffe Battery	4,776	..	4,776	..	4,776
19. Yaverland Battery	20,500	..	20,500	..	20,500
20. Sandown Fort	41,983	8,493	50,476	23,400	73,876
21. Sandown Battery	6,233	..	6,233	..	6,233
22. Military Road, S.W. Coast ..	16,638	90	16,728	..	16,728
LAND DEFENCES.—OUTER LINE.	134,492	11,006	145,498	23,400	168,898
23. Fort Purbrook and Outworks	85,053	49,339	134,392	..	134,392
24. Fort Widley	89,178	4,802	93,980	..	93,980
25. Fort Southwick	90,940	3,322	94,262	..	94,262
26. Fort Nelson	78,649	3,477	82,126	..	82,126
27. Fort Wallington	91,408	11,787	103,195	..	103,195
28. Fort Fareham..	87,291	17,276	104,567	..	104,567
LAND DEFENCES.—INNER LINE.	522,519	90,003	612,522	..	612,522
29. Hilsea Lines	98,495	41,074	139,569	..	139,569
30. Fort Grange	46,635	..	46,635	..	46,635
31. Fort Rowner	53,979	..	53,979	..	53,979
32. Fort Brockhurst	52,500	..	52,500	..	52,500
33. Stokes Bay Lines	26,448	..	26,448	..	26,448
	278,057	41,074	319,131	..	319,131
Total Amounts for Portsmouth.	1,592,387	1,031,147	2,623,534	206,700	2,830,234

Further Amount required to complete, including all liabilities; the Present Estimated Estimated Cost, inclusive of Shields; the Estimated Cost of Each Work under the cap. 145; the Sums charged to other Votes; and the General Totals.

7	8	9	10	11	12	
Expended out of Annual Votes, prior to Loan.	Total Estimated Cost of Work, including Expenditure prior to Loan.	Estimated Cost under Loan in Schedule of 1867.	Estimated Cost of each group on 31st Dec., 1868, from Col. 4.	Portion of Col. 4 proposed to be provided out of Annual Votes.	Total to be charged to Loan for Works, exclusive of Iron Shields.	
£	£	£	£	£	£	
..	424,694	365,000	424,694	..	424,694	1
..	462,500	406,000	462,500	..	462,500	2
..	167,300	293,000	169,574	..	159,500	3
2,310*	12,384				10,074	
..	123,311	145,000	138,975	..	138,975	4
..	28,964					5
2,310	1,219,153					
..	8,800	58,000	70,195	..	70,195	6
..	100,120					7
..	75,879	60,000	62,508	1,510	60,998	8
..	17,435			..		9
14,726	18,945			..		10
14,726	221,179					
..	209,271	110,000	120,821	..	120,821	11
..	7,656	90,000	97,116	698	96,418	12
..	5,825			..		13
..	12,899			..		14
..	32,714			..		15
..	38,022			..		16
..	306,387					
..	46,785	145,000	145,498	2,207	138,346	17
..	4,776			..		18
..	20,500			..		19
..	73,876			4,945		20
..	6,233			..		21
..	16,728			..		22
..	168,898					
..	134,392	550,000	612,522	..	612,522	23
..	93,980					24
..	94,262					25
..	82,126					26
..	103,195					27
..	104,567					28
..	612,522					
69,685	209,254	318,000	319,131	..	319,131	29
56,410†	103,045					30
56,409†	110,388					31
56,409†	108,909					32
48,672	75,120					33
287,585	606,716					
304,621	3,134,855	2,540,000	2,623,534	9,360	2,614,174	

SCHEDULE—

1 Station, District, and Name of Work.	2 Payments on each of the works up to 30th June, 1868.	3 Further Amount required to complete each work, inclusive of all liabilities, excluding Shields.	4 Estimated Cost of each work on 31st Dec., 1868, excluding Shields.	5 Approximate Estimate of Cost of Shields.	6 Estimated Cost of each Work, including Shields.
PLYMOUTH.					
SEA DEFENCES.—OUTER LINE.	£	£	£	£	£
34. Bovisand Battery	43,429	14,835	58,264	29,900	88,164
35. Breakwater Fort	100,142	66,920	167,062	..	167,062
36. Picklecombe Battery.. ..	66,525	14,351	80,876	68,250	149,126
37. Cawsand Battery	12,914	..	12,914	..	12,914
SEA DEFENCES.—INNER LINE.	223,010	96,106	319,116	98,150	417,266
38. Mount Edgcumbe Battery ..	7,804	1,898	9,702	9,100	18,802
39. Drake's Island Battery ..	26,586	8,222	34,808	27,300	62,108
40. Western King Battery ..	2,887	..	2,887	..	2,887
41. Eastern King Battery ..	2,019	..	2,019	..	2,019
LAND DEFENCES. ANTHONY POSITION.	39,296	10,120	49,416	36,400	85,816
42. Fort Tregantle	135,425	1,080	136,505	..	136,505
43. Military Road from Tregantle to Scraesdon	..	3,767	3,767	..	3,767
44. Fort Scraesdon	109,827	10,781	120,608	..	120,608
MAKER AND WHITESAND BAY DEFENCES.	245,252	15,628	260,880	..	260,880
45. Knatterbury Hill	..	..	..	..	..
46. Military Road from Polhawn to Tregantle	5,776	..	5,776	..	5,776
47. Polhawn Battery, Whitesand Bay	8,850	..	8,850	..	8,850
NORTH-EASTERN DEFENCES.	14,626	..	14,626	..	14,626
48. Ernesettle Fort	15,000	2,630	17,630	..	17,630
49. Agaton Fort	35,000	6,133	41,133	..	41,133
50. Knowles Battery	18,000	1,562	19,562	..	19,562
51. Woodlands Fort	20,000	7,973	27,973	..	27,973
52. Crownhill Fort	57,000	19,409	76,409	..	76,409
53. Bowden Fort..	11,000	4,891	15,891	..	15,891
54. Egg Buckland Keep	10,000	4,642	14,642	..	14,642
55. Forder Battery	9,991	6,452	16,443	..	16,443
56. Austin Fort	12,000	8,607	20,607	..	20,607
57. Fort Efford	32,721	17,682	50,403	..	50,403
58. Laira Battery..	10,877	5,928	16,805	..	16,805
59. Military Road and Emplacements on the North-Eastern Defences from Ernesettle to Austin	211	2,454	2,665	..	2,665
60. Ditto Efford and Laira ..	..	2,418	2,418	..	2,418
STADDON DEFENCES..	231,800	90,781	322,581	..	322,581
61. Fort Stamford	59,123	11,236	70,359	..	70,359
62. Fort Staddon..	111,562	1,282	112,844	..	112,844
63. Brownhill and Watchhouse—Brake Batteries	24,533	1,235	25,768	..	25,768
DEVONPORT DEFENCES.	195,218	13,753	208,971	..	208,971
64. Devonport Lines	9,819	..	9,819	..	9,819
Total Amounts for Plymouth.	959,021	226,388	1,185,409	134,550	1,319,959

continued.

7 Expended out of Annual Votes, prior to Loan.	8 Total Estimated Cost of Work, including Expenditure prior to Loan.	9 Estimated Cost under Loan in Schedule of 1867.	10 Estimated Cost of each Group on the 31st Dec., 1868, from Col. 4.	11 Portion of Col. 4 proposed to be provided out of Annual Votes.	12 Total to be charged to Loan for Works, exclusive of Iron Shields.	
£	£	£	£	£	£	
..	88,164	60,000	58,264	..	58,264	34
..	167,062	155,000	167,062	..	167,062	35
..	149,126	87,000	80,876	..	80,876	36
3,257	16,171	13,000	12,914	..	12,914	37
3,257	420,523					
..	18,802			1,898		38
..	62,108	47,000	49,416	566	46,952	39
289	3,176			..		40
..	2,019			..		41
289	86,105					
53,494	189,999			880		42
..	3,767	260,000	260,880	..	260,000	43
16,803	137,411			..		44
70,297	331,177					
..	..					45
..	5,776	15,000	14,626	..	14,626	46
..	8,850					47
..	14,626					
..	17,630			..		48
..	41,133			..		49
..	19,562			..		50
..	27,973			..		51
..	76,409			..		52
..	15,891			..		53
..	14,642			..		54
..	16,443			..		55
..	20,607			..		56
..	50,403	518,000	531,552	..	530,828	57
..	16,805			..		58
..	2,665			..		59
..	2,418			..		60
..	322,581					
..	70,359			..		61
..	112,844			724		62
..	25,768			..		63
..	208,971					
2,905	12,724	10,000	9,819	..	9,819	64
76,748	1,396,707	1,165,000	1,185,409	4,068	1,181,341	

SCHEDULE—

1 Station, District, and Name of Work.	2 Payments on each of the works up to 30th June, 1868.	3 Further Amount required to complete each work, inclusive of all liabilities, excluding Shields.	4 Estimated Cost of each work on 31st Dec., 1868, excluding Shields.	5 Approximate Estimate of Cost of Shields.	6 Estimated Cost of each Work, including Shields.
PEMBROKE.					
MILFORD HAVEN.	£	£	£	£	£
SEA DEFENCES.					
65. Stack Rock Fort	48,445	19,984	68,429	20,800	89,229
66. South Hook Battery	38,851	5,215	44,066	..	44,066
67. Hubberstone Battery ..	53,443	5,872	59,315	14,300	73,615
68. Popton Battery	57,937	3,399	61,336	14,300	75,636
69. Chapel Bay Battery	..	13,754	13,754	..	13,754
	198,676	48,224	246,900	49,400	296,300
LAND DEFENCES.					
70. Fort Scoveston	40,610	4,852	45,462	..	45,462
WORKS AT LANDING PLACES, SOUTH OF MILFORD HAVEN.					
71. St. Catherine's Island ..	1,926	10,734	12,660	3,600	16,260
72. Proud Giltar Battery.. ..	..	6,668	6,668	1,200	7,868
73. Eastmoor Battery	..	8,000	8,000	..	8,000
74. Trewent Battery	..	8,718	8,718	1,200	9,918
75. Freshwater West Battery ..	..	8,000	8,000	..	8,000
	1,926	42,120	44,046	6,000	50,046
Total Amounts for Pembroke..	241,212	95,196	336,408	55,400	391,808
PORTLAND.					
76. Verne Citadel..	121,515	13,721	139,374	..	139,374
77. East Wear Batteries ..		4,138			
	121,515	17,859	139,374	..	139,374
BREAKWATER.					
78. Inner Pier Head Battery ..	2,280	..	2,280	..	2,280
79. Portland Breakwater Fort ..	75,968	197,690	273,658	..	273,658
WEYMOUTH.					
80. Nothe Fort	86,872	6,408	93,280	13,000	106,280
	165,120	204,098	369,218	13,000	382,218
Total Amount for Portland..	286,635	221,957	508,592	13,000	521,592
THAMES.					
81. Coalhouse Fort	52,512	158,551	211,063	..	211,063
82. Cliffe Fort	39,440	123,497	162,937	..	162,937
83. Shornmead Fort	32,600	115,105	147,705	..	147,705
84. Slough Fort	22,343	800	23,143	4,200	27,343
Total Amounts for Thames..	146,895	397,953	544,848	4,200	549,048

continued.

7 Expended out of Annual Votes, prior to Loan.	8 Total Estimated Cost of Work, including Expenditure prior to Loan.	9 Estimated Cost under Loan in Schedule of 1867.	10 Estimated Cost of each Group on 31st Dec., 1868, from Col. 4.	11 Portion of Col. 4 proposed to be provided out of Annual Votes.	12 Total to be charged to Loan for Works, exclusive of Iron Shields.	
£	£	£	£	£	£	
7,611	96,840			..		65
4,088	48,154			5,215		66
8,211	81,826	225,000	246,900	5,872	232,414	67
9,623	85,259			3,399		68
..	13,754			..		69
29,533	325,833					
..	45,462	50,000	45,462	..	45,462	70
..	16,260					71
..	7,868					72
..	8,000	50,000	44,046	..	44,046	73
..	9,918					74
..	8,000					75
..	50,046					
29,533	421,341	325,000	336,408	14,486	321,922	
76,293	215,667	125,000	139,374	3,248	136,126	76 77
76,293	215,667					
8,395	10,675			..		78
3,445	277,103			..		79
		295,000	369,218		365,442	
10,769	117,049			3,776		80
22,609	404,827					
98,902	620,494	420,000	508,592	7,024	501,568	
..	211,063	164,000	211,063	..	211,063	81
..	162,937	121,000	162,937	..	162,937	82
..	147,705	118,000	147,705	..	147,705	83
..	27,343	23,000	23,143	160	22,983	84
..	549,048	426,000	544,848	160	544,688	

SCHEDULE—

1 Station, District, and Name of Work.	2 Payments on each of the works up to 30th June, 1868.	3 Further Amount required to complete each work, inclusive of all liabilities, excluding Shields.	4 Estimated Cost of each work on 31st Dec., 1868, excluding Shields.	5 Approximate Estimate of Cost of Shields.	6 Estimated Cost of each Work, including Shields.
MEDWAY AND SHEERNESS.	£	£	£	£	£
SEA DEFENCES.					
85. Grain Fort	99,845	14,869	114,714	..	114,714
86. Grain Battery	27,455	4,279	31,734	..	31,734
87. Garrison Point	81,067	8,162	89,229	61,750	150,979
88. Hoo Fort	36,807	27,540	64,347	15,950	80,297
89. Darnet Fort	43,485	32,204	75,689	15,950	91,639
	288,659	87,054	375,713	93,650	469,363
LAND FRONT OF SHEERNESS.					
90. Queenborough Lines ..	18,586	320	18,906	..	18,906
91. Queenborough Battery ..	..	30,853*	30,853*	..	30,853*
92. Cheney Battery	..	30,528*	30,528*	..	30,528*
	18,586	61,701	80,287	..	80,287
Total Amounts for Medway and Sheerness	307,245	148,755	456,000	93,650	549,650
DOVER.					
WESTERN HEIGHTS.					
93. Drop Redoubt	13,276	..	13,276	..	13,276
94. North Centre Bastion ..	38,017	..	38,017	..	38,017
95. Western Outwork	62,419	..	62,419	..	62,419
96. South Front Barracks ..	48,425	..	48,425	..	48,425
97. Citadel	34,560	..	34,560	..	34,560
	196,697	..	196,697	..	196,697
CASTLE HEIGHTS.					
98. East Front Casemates ..	6,583	..	6,583	..	6,583
99. Castle Hill Fort	77,716	10,337	88,053	..	88,053
	84,299	10,337	94,636	..	94,636
Total Amounts for Dover ..	280,996	10,337	291,333	..	291,333
CORK.					
CORK HARBOUR.					
100. Spike Island	4,618	12,695	17,313	24,000	41,313
101. Carlisle Fort	27,627	59,872	87,499	24,000	111,499
102. Camden Fort	32,334	35,897	68,231	15,000	83,231
Total Amounts for Cork ..	64,579	108,464	173,043	63,000	236,043

continued.

7 Expended out of Annual Votes, prior to Loan.	8 Total Estimated Cost of Work, including Expenditure prior to Loan.	9 Estimated Cost under Loan in Schedule of 1867.	10 Estimated Cost of each Group on 31st Dec., 1868, from Col. 4.	11 Portion of Col. 4 proposed to be provided out of Annual Votes.	12 Total to be charged to Loan for Works, exclusive of Iron Shields.	
£	£	£	£	£	£	
..	114,714					85
..	31,734	227,000	235,677	..	235,677	86
..	150,979					87
..	80,297	128,000	140,036	..	140,036	88
..	91,639					89
..	469,363					
..	18,906					90
..	30,853*	40,000	80,287*	..	80,287*	91
..	30,528*					92
..	80,287					
..	549,650	395,000	456,000	..	456,000	
24,301	37,577					
14,234	52,251					93
23,724	86,143					94
6,095	54,520					95
26,926	61,486					96
95,280	291,977	285,000	291,333	..	291,333	97
..	6,583					98
..	88,053					99
..	94,636					
95,280	386,613	285,000	291,333	..	291,333	
..	41,313	10,000	17,313	..	17,313	100
..	111,499	79,000	87,499	..	87,499	101
..	83,231	70,000	68,231	..	68,231	102
..	236,043	159,000	173,043	..	173,043	

* This sum includes 40,000*l.* for turrets, which are essential in these works.

SUM

1 Station, District, and Name of Work.	2 Payments on the works up to 30th June, 1868.	3 Further Amount required to complete the works, inclusive of all liabilities, excluding Shields.	4 Estimated Cost of the works on 31st Dec., 1868, excluding Shields.	5 Approximate Estimate of Cost of Shields.	6 Estimated Cost of the Works, including Shields.
	£	£	£	£	£
PORTSMOUTH	1,592,387	1,031,147	2,623,534	206,700	2,830,234
PLYMOUTH	959,021	226,388	1,185,409	134,550	1,319,959
PEMBROKE	241,212	95,196	336,408	55,400	391,808
PORTLAND	286,635	221,957	508,592	13,000	521,592
THAMES	146,895	397,953	544,848	4,200	549,048
MEDWAY	307,245	148,755	456,000	93,650	549,650
DOVER	280,996	10,337	291,333	..	291,333
CORK	64,579	108,464	173,043	63,000	236,043
TOTAL..	3,878,970	2,240,197	6,119,167	570,500	6,689,667
Providing and fixing Iron Shields..	..	..	..	..	..
Incidental Expenses (Works and Experiments)	154,835	40,000	194,835	..	194,835
Lands, including Cost of Surveys, Surveyors' Charges, Legal and other Incidental Expenses ..	1,085,033	17,000	1,102,033	..	1,102,033
GENERAL TOTAL ..	5,118,838	2,297,197	7,416,035	570,500	7,986,535

MARY.

7 Expended out of Annual Votes, prior to Loan.	8 Total Estimated Cost of Works including Expenditure prior to Loan.	9 Estimated Cost under Loan in Schedule of 1867.	10 Estimated Cost of each Group on 31st Dec., 1868, from Col. 5.	11 Portion of Col. 4 proposed to be provided out of Annual Votes.	12 Total to be charged to Loan for Works, exclusive of Iron Shields. (Inserted below.)	
£	£	£	£	£	£	
304,621	3,134,855	2,540,000	2,623,534	9,360	2,614,174	
76,748	1,396,707	1,165,000	1,185,409	4,068	1,181,341	
29,533	421,341	325,000	336,408	14,486	321,922	
98,902	620,494	420,000	508,592	7,024	501,568	
..	549,048	426,000	544,848	160	544,688	
..	549,650	395,000	456,000	..	456,000	
95,280	386,613	285,000	291,333	..	291,333	
..	236,043	159,000	173,043	..	173,043	
605,084	7,294,751	5,715,000	6,119,167	35,098	6,084,069	
..	..	475,000	..	..	570,500	
..	194,835	165,000	194,835	..	194,835	
..	1,102,033	1,115,000	1,102,033	..	1,102,033	
605,084	8,591,619	7,470,000	7,416,035	35,098	7,951,437*	

* If Captain Moncrieff's system of Mounting Guns should be adopted in the Works detailed in Appendix No. VIII., a saving on the above estimates for Works and Shields of 194,159*l.* will be effected.

APPENDICES

TO THE

REPORT OF THE COMMITTEE

ON

FORTIFICATIONS.

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APPENDIX No. I.

Copies of Letters regarding the proceedings of the Committee on Fortifications.

C. on F.
71

Committee on Fortifications,
109, *Victoria Street, 7th July,* 1868.

Sir,

The Committee of which I am President, in prosecuting their inquiry as regards clauses *c* and *d* of your letter of Instructions dated 16th April, 1868, $\frac{\text{General No. 14}}{1220}$, find themselves in some difficulty with reference to the iron superstructures contemplated in some of the forts, and also as to the shields in those works which have been constructed for their reception.

The Committee have been informed by the Director of Works that there are at present no approved plans of the details of iron superstructures, and that the design of the shields will be subject to consideration with reference to the results of the experiments which are now being carried on; and also, that it is now being deliberated whether, at many of the forts, gun carriages on the system proposed by Captain Moncrieff, might not be adopted; and the iron walls or shields dispensed with.

Under these circumstances it is impossible for the Committee to arrive at any definite conclusions regarding the clauses of your Instructions which I have already quoted, viz.,—the power of resistance to attack, and the expenditure that may be needed for completion, of the works in which these as yet undecided questions are involved.

I have therefore the honor to request that the Committee may be informed whether it will be sufficient that they should, in those cases, inquire only (as laid down in the second paragraph of their Instructions) into the security of the foundations and the basement storys, and their sufficiency generally, to support the weights that the iron superstructure will probably bring upon them, on the supposition that those weights will be judiciously distributed; or whether their inquiry is to be deferred until the plans for the completion of the forts are finally approved.

I have the honor to be,
Sir,
Your obedient Servant,
FRED. WM. GREY, *Admiral,*
President of the Committee on Fortifications.

The Right Hon.
Sir J. S. Pakington, Bart., G.C.B., M.P., &c.,
Secretary of State for War.

General No. 14.
1313

War Office, 17*th July,* 1868.

Sir,

I am directed by the Secretary of State for War to acknowledge the receipt of your letter of the 7th inst., respecting the inability of the Committee on Fortifications to arrive at any definite conclusions with regard to the iron superstructures contemplated in some of the forts, and also to the shields in those works, and to acquaint you in reply, for the information of the Committee, that Secretary Sir John Pakington concurs in the proposal that they should, in those cases, inquire only (as laid down in the second paragraph of their Instructions) into the security of the foundations and the basement storys, and their sufficiency generally to support the weights that the iron superstructures will probably bring upon them, on the supposition that those weights will be judiciously distributed.

I have the honor to be
Sir,
Your obedient Servant,
LONGFORD.

Admiral the Hon. Sir F. W. Grey, G.C.B.,
President of the Committee on Fortifications.

C. on F.
32

Committee on Fortifications,
109, *Victoria Street, S.W.,* 18*th May,* 1868.

Sir,

Adverting to clause *c* of the Instructions dated 16th April, $\frac{\text{General No. 14}}{1220}$, addressed to Admiral the Hon. Sir F. W. Grey, G.C.B., the President of the Committee on Fortifications, it appears from the evidence of several witnesses examined by the Committee, that there are no data within their know-

ledge from which conclusions can be arrived at as to the powers of resistance offered by either masonry or earthwork to the shot or shell fired by the heaviest ordnance of the present day.

I am directed by the Committee to call your attention to the great importance of this question, and to the necessity of ascertaining, by experiment, what thickness of such earthwork or masonry would be required to protect both guns and magazines; and also what effect the explosion of the heavy charges now being introduced would have on the sills and cheeks of earthen embrasures: and I am therefore to request that you will move Secretary Sir John Pakington to direct that arrangements should be made, as soon as may be practicable, for carrying out the requisite experiments.

I have the honor to be,
Sir,
Your obedient humble Servant,
J. C. ARDAGH, *Lieut. R.E.*,
Secretary to Committee.

The Under Secretary of State for War,
War Office, Pall Mall.

General No. 14.
1270

Sir,

War Office, 20th June, 1868.

In reference to your letter, C. on F. 32, dated 18th ultimo, requesting, by desire of the Committee on Fortications, that Sir John Pakington would sanction experiments being made for the purpose of ascertaining what thickness of earthwork or masonry would be required to protect both guns and magazines, and what effect the explosion of the heavy charges now being introduced would have on the sills and cheeks of earthen embrasures; I am desired to acquaint you, for the information of the Committee, that Sir John Pakington has approved of an experimental structure being prepared at Shoeburyness to test the power of resistance offered by earthwork to the fire of guns of the present day.

The accompanying tracing shows the structure proposed to be erected, and I am to request that you will move the Committee to favour Sir John Pakington with any observations they may have to offer thereon.

With regard to the proposed trial of artillery of the present day against masonry, I am to state that it appears to the Secretary of State for War that the best plan would probably be to fire two or three shots at the base of one of the new forts already constructed.

I have the honor to be,
Sir,
Your obedient Servant,
EDWARD LUGARD.

The Secretary,
Committee on Fortifications,
109, *Victoria Street, S.W.*

C. on F.
64

Sir,

Committee on Fortifications,
109, *Victoria Street, 1st July,* 1868.

I am desired by the Committee on Fortifications to acknowledge the receipt of your letter dated 20th ultimo, General No. 14 / 1270, and to inform you that the Committee having considered the tracing of the structure which it is proposed to erect for the purposes detailed in the previous correspondence on this subject, are of opinion that such a construction would afford the means of ascertaining the penetration of heavy projectiles, and the effect of large shells on earthwork and concrete, but that having regard to the time which might probably be required for the construction of the embrasure and shield in the manner represented, they would suggest that the experiments against the simple and compound parapets should take place, without waiting for the completion of that part of the structure, in order that they may the sooner be in a position to express an opinion on the works now in progress which come within the scope of their inquiry.

I have the honor to be,
Sir,
Your obedient humble Servant,
J. C. ARDAGH, *Lieut. R.E.*,
Secretary to the Committee.

The Under Secretary of State for War,
War Office, Pall Mall.

C. on F.
139

Sir,

Committee on Fortifications,
109, *Victoria Street, 6th January,* 1869.

With reference to your decision on General No. 14 / 1414, that the experiments proposed by the Committee on Fortifications in their letter dated 18th May, 1868, should be postponed, and the question re-submitted for your decision in three months;—I have the honour to inform you that, as the Committee of which I am President hope to complete their inquiry at no distant date, it is probable that these experiments could not under any circumstances now be made in time to afford them the information they desired, when in May last, they brought the subject under the consideration of the Secretary of State for War. The postponement of the experiments will not therefore affect the pre-

paration of the Committee's Report, and they have only to repeat the expression of their opinion of the great importance of obtaining more reliable data, than at present exist, for determining the amount of protection required to give security against the heavy projectiles of the present day, under the varying conditions of the works and fortifications upon which they have been directed to report.

I have the honor to be,
Sir,
Your obedient Servant,
FRED. WM. GREY, *Admiral*,
President of the Committee.

The Right Hon.
Edward Cardwell, M.P., &c., &c., &c.,
War Office, Pall Mall.

C. on F.
159

Committee on Fortifications,
109, *Victoria Street, S.W., 5th February*, 1869.

Sir,

With reference to your letter dated 17th July, 1868, $\frac{\text{General No. 14}}{1313}$, I have the honor to state that, although the Committee of which I am President are informed that the precise form in which iron is to be applied for the protection of casemates, and for the superstructures of sea forts, has not been finally decided (and therefore it is impossible to give an opinion upon the amount of resistance which these structures may offer), they believe that an approximate estimate of their cost may be made, which although liable to some variation, according to the plan which may eventually be adopted, will yet be sufficiently near to give a good idea of the further expenditure that will be required to complete the various works. They would therefore suggest that this estimated cost should be included in their Report, and that the Director of Works should be instructed to furnish them with the information necessary for that purpose; and they would also further suggest that, in order to make their Report complete, they may be authorised to obtain from the proper quarter a statement of the expenditure on lands and on miscellaneous items connected with the works, with an estimate of the amounts still required under those heads.

The Committee believe, that with this addition to the information they have collected, they will be able to lay before the Secretary of State a complete view of the present state and further requirements of the important works which form the subject of their inquiry.

I have the honor to be,
Sir,
Your obedient Servant,
FRED. WM. GREY, *Admiral*,
President of the Committee.

The Right Hon.
Edward Cardwell, M.P., &c., &c., &c.,
War Office, Pall Mall.

Gen. No. 14.
1433

Sir,

War Office, 25th February, 1869.

I am directed by Mr. Secretary Cardwell to acknowledge the receipt of your letter of the 5th instant, $\frac{\text{C. on F.}}{159}$, and to acquaint you, in reply, that he concurs with the Committee on Fortifications, that they should be furnished with a statement of the estimated cost of the iron armour which it is proposed to apply to the casemates, and for the superstructures of sea forts, constructed under the Loan for Defences; and that the Director of Works has been instructed to supply the Committee with such information accordingly.

The Director of Works has further been instructed to furnish the Committee with a return of the total expenditure on lands and on miscellaneous items connected with the works, together with an estimate of the total amounts required under those heads, in accordance with the suggestion of the Committee.

I have the honor to be,
Sir,
Your obedient Servant,
EDWARD LUGARD.

Admiral the Hon. Sir F. W. Grey, G.C.B.,
President of the Committee on Fortifications,
109, *Victoria Street.*

General No. 14
1437

Sir,

War Office, S.W., 24th February, 1869.

With reference to the paragraph in the Instructions to the Committee on Fortifications, directing the Committee to accept as approved the positions and general plans of the works; I am desired by the Secretary of State for War to inform the Committee that in certain cases a final decision has not as yet been arrived at as to the precise description of the works to be constructed, and that in those cases the Director of Works will lay before you alternative plans and estimates, showing the extreme limits within which the design, which may be ultimately adopted, will lie; he will also inform you of the reasons which have led to a postponement of a decision in regard to them.

I have the honor to be,
Sir,
Your obedient Servant,
EDWARD LUGARD.

To Admiral
The Hon. Sir. F. W. Grey, G.C.B.,
President of the Committee on Fortifications.

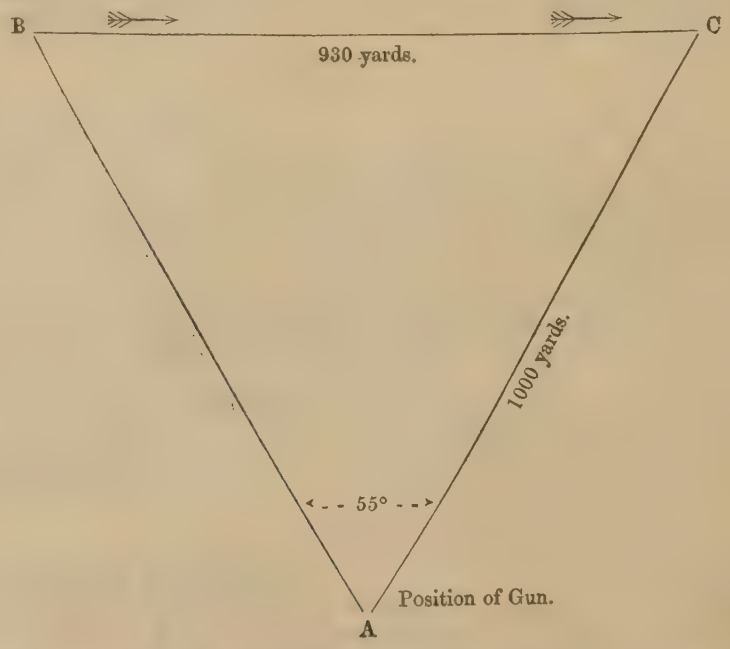
APPENDIX No. II.

Shoeburyness, 15th May, 1868.

Memoranda of Experiments on the Accuracy and Rapidity of Fire from Heavy Guns against Moving Objects.

The target was a light timber frame 5 feet square, mounted on wheels, and attached by a long trail rope to a limber drawn by four horses.

Diagram of the Range.



The range varied between 900 and 1,000 yards. The rate at which the target moved was as follows:—1st, at a walk, the distance of 930 yards was traversed in 9 minutes, at a rate of 3½ miles an hour, or 1·72 yards per second; 2nd, at a trot, the same distance was traversed in 3 minutes 10 seconds, at a rate of 10 miles an hour, or 5 yards a second.

The 9″ muzzle-loading rifled gun of 12 tons was first employed, with a charge of 30 lbs. and a 250-lb. shot. It was mounted on a traversing platform moving on racers of 6′ 0″ and 16′ 6″ radii, and an imaginary front pivot. The gun detachment consisted of one officer and 12 men, all highly trained. The average velocity of the shot would be about 1,320 feet per second, the time of flight for 1,000 yards about 2·2 seconds, and the space through which the target would move in that time would be: walking, 4 yards; trotting, 11 yards. The difficulties of aiming accurately at an object only 5 feet square, moving rapidly over a surface not altogether level, were therefore considerable.

The subjoined Table gives the results :—

9-Inch Gun, Target at a Walk.

Number of Round.	Time from firing the First Shot.	Interval in Seconds.	Distance travelled by Target.	Interval in Distance.	Remarks.
	′ ″	″	Yards.	Yards.	
1	0·00	83	0	143	The Target was not struck. The greatest deviation was estimated to be 12 yards to the left, and 15 feet above the centre of Target.
2	1·23	56	143	97	
3	2·19	50	240	86	
4	3·09	58	326	100	
5	4·07	58	426	100	
6	5·05	..	526	..	
Average	.. ..	61	.. ..	105	

9-Inch Gun, Target at a Trot.

1	0·00	50	0	250	The Target was not struck, but the deviation was very small.
2	0·50	44	250	220	
3	1·34	51	470	255	
4	2·25	62	725	310	
5	3·27	..	1,035	..	
Average	.. ..	52	.. ..	259	

The next experiment was made with a 22-ton gun, firing a 600-lb. shot, with a 50-lb. charge. This gun traversed on racers (described from an imaginary centre near the muzzle) laid on a turn-table 22 feet in diameter, such as would be used in a fixed iron turret, with two or more ports.

After each round the muzzle of the gun was brought round to the loading position about 70° to the left. The supply of shot lay about 30 feet to the rear, on the same level as the turn-table; they were rolled on skids under the muzzle of the gun, girthed by a sling of spun yarn, and hoisted by a small sheers and tackle to the level of the muzzle. The powder was in a position analogous to that which it would occupy if it had been hoisted from a magazine beneath. The gun detachment consisted of one officer and 17 men, all highly trained.

The following Table gives the results of the firing :—

22-Ton Gun, Target at a Walk.

Number of Round.	Time from firing the First Shot.	Interval in Seconds.	Distance travelled by Target.	Interval in Distance.	Remarks.
	′ ″	″	Yards.	Yards.	
1	0·00	150	..	258	Through target.
2	2·30	141	258	242	Other shots near.
3	4·51	..	500	..	
Average ..	..	145	.. ..	250	

22-Ton Gun, Target at a Trot.

1	0·00	136	..	680	All near, none estimated more than 12 yards out laterally, or 12 feet vertically.
2	2·16	123	680	615	
3	4·19	..	1,295	..	
Average	.. ..	130	.. ..	650	

The conclusions to be drawn from the practice which has been described are to this effect :—

1st. The time occupied by a vessel in traversing one mile at a speed of 10 miles an hour, would admit of a 9-inch 12-ton gun being loaded and fired seven times, and the 22-ton gun three times in each mile.

2nd. Crossing the range of a 12-ton gun mounted in a casemate, or in a battery, where the traversing angle is 70° at a distance of 1,000 yards, at the speed of 10 miles an hour, a vessel may be fired at six times; as the range is increased, or the speed is diminished, a proportionately larger number of shots may be fired at her. *Cæteris paribus*,—The 22-ton gun would have fired at her three times.

3rd. None of the shots recorded would have missed an iron-plated vessel of the ordinary height above water.

4th. The 12-ton gun can be loaded, aimed, and fired with accuracy in less than one minute, the 22-ton gun in less than two and a-half minutes.

5th. At this rate of firing, a considerable power will be required to raise shells from magazine magazines in the basement of casemated works. In the upper floor of a two-tier casemated work (such as Garrison Point) each lift must be able to raise ammunition for four guns, to a height of 32 feet from the basement. With the 9-inch gun of 12 tons the work to be done would be $4 \times 32 \times 250 = 32{,}000$ lbs. raised one foot high in a minute, *i.e.*, one horse-power.

In a casemated work of one tier, each lift supplies 250-lb. shell to two 9″ guns; the work would therefore be $2 \times 16 \times 250 = 8{,}000$ lbs. raised one foot high in a minute, or a quarter horse-power.

In a turret with two 23-ton guns, 32 feet above the basement; the work would therefore be $2 \times 32 \times 600 \div 2\frac{1}{2} = 15{,}360$ lbs. raised one foot high in a minute, *i.e.*, half a horse power.

6th. It would appear that manual power may prove to be inadequate for the purpose of supplying ammunition at a sufficiently rapid rate from the stores in the basement.

J. C. ARDAGH, *Lieut. R.E.*

APPENDIX No. III.

MEMORANDUM on the Modifications rendered necessary in Batteries, by Recent Improvements in Artillery.

1. A CONFIDENTIAL Circular on the subject of Coast Batteries, drawn up by a Committee of Officers of the Royal Artillery and Royal Engineers, was issued by the Master-General and Board of Ordnance on the 28th January, 1853.

In 1861 this Circular was revised by a joint Committee of the Ordnance Corps, by direction of His Royal Highness the General Commanding-in-Chief and the Secretary of State for War.

The rules laid down in the latter Circular are those by which the designers of the works commenced under the Loan about that date, were guided.

2. A few of the instructions regarding the detail of batteries and magazines are here quoted, in order to trace the advance in the manufacture of artillery, the improvements in the appliances for storing and supplying ammunition, and the changes which have in consequence been made in many of the works, under the Loan, during their construction.

Par. 2. "The 68-pounder gun" was the heaviest they contemplated.

Par. 8. "The Committee had no information with regard to rifled ordnance before them, though they looked forward to their introduction into the service, but only of *one* nature."

Par. 17. The Committee recommended:—that "In earthen batteries the distance between the guns, when mounted on traversing platforms, should not be less than 35 feet, and, where space will permit, traverses should be provided in the proportion of one to every two guns."

Par. 20. "Casemates should be from 14 to 20 feet in width, according to the extent of lateral range required; when arched they should not have a less height than 5 feet to the springing of the arch when semicircular, or 6 feet if flatter than a semicircle."

Par. 21. "That the principle of pivoting the gun under the muzzle would seem now to be in a fair way to being carried out."

Par. 23. "That all the ammunition for coast batteries be made up in cartridges, and that these cartridges be kept in metal-lined cases when the batteries are in such positions as to be exposed to damp or to the spray of the sea. It would also be desirable to have one barrel of loose powder per gun, with a proportionate number of flannel cartridges."

Par. 24. Magazine accommodation for 200 rounds per gun should be provided as contiguous to the battery as possible.

Par. 25. Bomb-proof shell-filling rooms are required in every battery; these, to prevent confusion from the crowding together of a number of men, should be provided in the proportion of about one to every six guns; *they may be contiguous to the magazines. When it is not practicable to place the shell-filling rooms near the main magazine,* small expense magazines, to hold three cases per gun, must be provided in connection with them. Plans were annexed showing an arrangement which they considered might be adopted with advantage.

In the drawings attached to the circular, the shell-filling rooms and magazines are shown side by side, connected by a hatch.

These rooms should be fitted up with cupboards, in which the master gunners may keep small and valuable stores, and should also be large enough to afford room for the stowage of shells under the benches or along the walls.

As a general rule shells should be kept in store loaded.

Par. 26. Receptacles to contain two cases of powder per gun for immediate supply should be provided either in the traverses or in rear of the terreplein; they ought never to be in the parapet itself. Receptacles for three or four loaded shells per gun should also be provided.

The traverses, if made hollow, will also afford bomb-proof cover for the men not actually employed in working the guns, and for those fixing fuzes, which ought to be done as close to the guns as possible. A drawing, showing the fuze fixing-rooms in the traverses, was annexed to the report.

Store-rooms and side-arm sheds are required also in every battery.

Par. 28. Two hundred rounds per gun is fixed as the proportion of ammunition.

Par. 32. Shot furnaces and furnaces for melting iron, are recommended to be provided in all important batteries.

In the drawings, the parapets are shown 20 feet and 25 feet thick.

The protection against vertical fire in the magazines is—

3′ brick, 1′ 6″ concrete, and 4′ earth; and of the fuze fixing rooms, 2′ 3″ brick, 1′ concrete, and 2′ 9″ earth. The guns are shown 40′ feet from centre to centre, on muzzle-pivoting platforms.

No mention is made of the employment of iron in connection with embrasures or shields.

The date of this revised Circular is 1st January, 1861, eleven months subsequent to the signature of the Report of the Royal Commission on National Defences.

3. The early designs for the Coast and Sea Batteries, constructed under the Loan for Defences, were drawn up on these principles, though at the end of 1860 plans had already been approved for some of the works with iron shields for the protection of their guns. The distance between guns in open batteries was increased from a minimum of 35 feet recommended, to 40 feet and 45 feet; and the gun casemates were designed of an uniform width of 20 feet.

The magazine arrangements were designed in accordance with the plans recommended in the Circular, viz., each work had one main magazine, with a shifting-room attached, the latter usually not bomb-proof. Fuze fixing rooms and shell filling rooms, with small powder magazines in connection with them, were provided in the proportion of one for from 6 to 10 guns. There were besides small recesses to hold a few shell or cartridges for every pair of guns.

Embrasures in stone for sea works had not then been entirely abandoned.

4. From that time to the present, the progress in artillery has been rapid and continuous. The 68-pounder has for important coast defences become altogether obsolete, and it is considered useless to prepare sea batteries, intended to oppose armour-clad ships, for the reception of any piece less powerful than the 9″ gun of 12½ tons.

5. This advance in the power of artillery necessitated corresponding increases in the defensive parts of works and batteries. The earthen parapets were thickened. Embrasures in stone were abandoned except in positions of minor importance; and the employment of iron for defensive purposes became an acknowledged necessity.

It had been proposed to use it in strengthening the embrasures—next to cover the adjoining walls with bars or plates—and afterwards to cut away all the weak part of the wall adjoining the embrasure, and to substitute an iron shield with a port cut in it. In 1865, after numerous preliminary experiments, two casemates were built on this system at Shoeburyness, and were fired at by the 7″, 8″, 9″, and 10″ guns. The shield in one casemate was a compound structure 12′ by 8′, containing in all 15″ in thickness of iron, besides 6″ of teak; it received 15 shots and was still serviceable. The shield in the other, formed of a single rolled 13-inch iron plate 6 feet square, was struck by 9 shot and completely cracked through in two places.

The granite masonry was very seriously injured, and after the thirty-third hit on the granite the casemates were reported as beginning to be untenable. The Fortification Committee were however unanimous in preferring a structure of granite and iron combined to one wholly of iron, being of opinion that ample strength could thus be obtained, and a larger number of guns casemated for the same expense. Other shields (and iron structures) were tried at various times. In the latest development of defensive construction, the entire front of the casemates is made of iron. Two experimental structures, one representing a single casemate of the same design as the Plymouth Breakwater Fort, and the other, combining various proposals, were tested in June 1868.

Without entering into details of construction, it is supposed that a thickness of iron averaging not less than 2 feet, including the backing, will be required to give sufficient protection against the 12″ gun of 25 tons.

6. The Committee of 1861 alluded to pivoting the gun under the muzzle. That arrangement has been carried out as regards lateral range, and, with a view to limit the opening of the port vertically as well as horizontally, carriages have been proposed to admit of the gun being traversed vertically as well as horizontally on an imaginary point about one foot from its muzzle. Should this plan be adopted the cost of the carriages will be largely increased.

7. Besides the changes which the substitution of a vastly heavier armament necessitated in the batteries themselves, the great increase in the size and weight of the cartridges and shells made them no longer easily portable; and the magazines and shell filling rooms which were suited to the requirements of the ancient armaments proved inadequate for the convenient supply of ammunition to the new guns.

8. About the same time a feeling that the risks attending the introduction of lights in the vicinity of powder ought to be reduced as much as possible, led to a decision that the passages used for powder should in no cases be used to carry lights through.

9. The conditions imposed by the introduction of the new armament were carefully considered by the Director of Works in connection with the Artillery authorities, and plans were prepared by his department of the different buildings and appliances necessary for the storage, manipulation, and supply of the new ammunition. These plans, when after a complete consideration they had been matured, were submitted to the Artillery authorities, viz., the Director of Ordnance, the Inspector-General of Artillery, the President of the Ordnance Select Committee, and the Deputy Adjutant-General of Royal Artillery, and were approved by them.

10. The designs comprised three different arrangements of magazines in Coast Batteries—

1st. Those in the basement story of casemated batteries.
2nd. Those placed in rear of casemated batteries where no basement tier was available.
3rd. Those for the supply of guns in open batteries.

The cartridges for the 7″ 7-ton gun and upwards are issued each in a separate metal case—the shells loaded and plugged.

1st. In the first case mentioned above, the basement story under the gun-casemates is entirely appropriated for the storage of ammunition, and is capable of containing at least 100 rounds per gun; there being in these cases no reserve magazines. The front wall when exposed to fire is made not less than 14 feet thick, and faced with massive granite. In rear of it a longitudinal passage, called the powder passage, 3′ 6″ to 5′ broad, bounded on the inner side by a 3-foot wall, runs from end to end of the battery. This wall, together with the front wall, gives a total protection of not less than 17 feet of masonry to the magazine chambers, which are allotted alternately for cartridge and shell. In rear of the magazine chambers is a second longitudinal passage also 3′ 6″ to 5′ in width, called the *shell passage*. Above the latter, if the height is sufficient, or in rear of it if otherwise, is a third longitudinal passage, not necessarily more than 2′ 6″ in width, and called the *lighting passage*, being used for the introduction into their receptacles of the lamps employed for lighting the magazines, the shell passage, and the shell lifts. The Powder Passage is lighted by lamps dropped down from above. For lighting the magazines candles are now preferred to oil. Where the front wall is not protected by a glacis, transverse passages are cut off from the Cartridge Stores, communicating with them and with the Shell Passage by doorways, and with the Powder Passage by a hatch through which the cartridge cases are passed; in other cases the communication is direct.

The Shell Stores are entered by doors from the Shell Passage. In rear of the front piers, and in the rear piers themselves, are circular shafts fitted with cages and tackles descending into the Powder and Shell Passages, or into recesses from them. It will be seen that in a casemated work of one tier, there is one Cartridge Store and one Shell Store for every two guns; one shell lift for each gun, and about two cartridge lifts for three guns, the place of the third lift being occupied by the lamp for lighting the Powder Passage.

In the case of works having two tiers of guns in casemates, the same number of magazines and lifts supply double the number of guns.

In Appendix No. V. will be found the record of a trial made at Gilkicker on the 28th December, 1868, to test these arrangements. The result of that trial showed that some better system would be required for the supply of ammunition from a basement story, with sufficient rapidity to sustain a continued fire from heavy guns. Further practice can alone determine what those arrangements should be.

2nd. The second variety of magazines consists of those placed in rear of casemated batteries which have no basement.

Reserve magazines of similar construction, but on a larger scale than the basement magazines already described, usually only one to each battery, are provided to hold the reserve of 75 rounds per gun, and expense magazines, in the proportion of one to each group of from four to seven guns, contain the remaining 25 rounds. The Laboratory or Shell Filling Room is provided at a safe distance from the magazines, in order to limit the destructive effect of an accidental explosion.

It appears very desirable to limit the number of heavy guns to be served from each expense magazine to four.

The Expense Magazines, each containing a Shell Store and a Cartridge Store, are placed as near as is practicable to the guns they have to serve, and on the same level. They have the same protection against direct and vertical fire, viz., 17 feet of masonry, and 6 feet of brick and concrete respectively, as the basement magazines already described. The passages from 3′ 6″ to 5′ in width, by which the shells and cartridges are conveyed to the gun casemates, are designed with as great regard as possible to the safety of the magazines; when the passages are long they are if possible contrived with an entrance at each end, so that a continuous communication may be kept up; the lights are put in from the exterior or from separate passages devoted specially for that purpose. Tramways or wheeling-planks will be provided where necessary, and care is taken to avoid changes of level except at the lifts.

The magazines for turrets are of a similar construction, and are provided with lifts as described for casemates.

3rd. The third variety of magazines consists of those for open batteries.

The reserve magazine arrangement is the same as that last described. The expense magazines, in the best type of open batteries, are contained in the basement of the bomb-proof buildings in the traverses, with lifts of communication. Where there is a traverse for each gun, the traverses contain alternately shell and powder stores, if possible they have a subterranean communication with the reserve magazine, which permits of their being replenished without risk, even during action.

In the cases where there are no basements to the bomb-proofs in the traverses, the necessary protection against horizontal fire is obtained by masses of concrete on the exposed sides of the magazine, farther covered by the earth of the parapet. It is desirable that these traverses should in no cases be visible from the exterior of the work.

Batteries when prepared for action would probably have a certain number of projectiles placed in a convenient position near each gun.

The experiments carried on by the Committee at Shoeburyness, of which a detailed description is given in Appendix No. V., prove that common shells, when plugged, are subject to be exploded with great violence either by the impact of shot or heavy fragments of other shells; and it will therefore be necessary to place them where they will not be exposed to such a risk. The Palliser shells being much thicker than common shells, and containing a smaller bursting charge, are not so liable to explosion from these causes.

The following Table shows the weights of the projectiles of the different heavy rifled guns, with battering charges, the bursting charges of common shell, and the time required for firing each round by well-trained gun detachments, under the most favourable circumstances:—

Table I.

Nature of Gun.	Weight of				Time required for each Round.
	Gun.	Shot.	Battering Charge.	Bursting Charge of Common Shell.	
Inches.	Tons. cwt.	Pounds.	Pounds.	Pounds. ozs.	Seconds.
12	23 0	600	76	35 0	140
10	18 0	400	60	32 0	100
9	12 10	250	43	18 8	60
8	9 0	180	30	13 0	55
7	7 0	115	22	8 8	50
6·3	3 4	64	8	7 4	45

Note.—The times for the 6·3-inch, 8-inch, and 10-inch guns are interpolated, the others are the averages of many trials.

Table II.

Table II. shows the probable maximum penetration of projectiles in various materials, compiled from various data. The data upon which the penetrations of projectiles into various materials are based, have not been well ascertained, and this Table has been compiled with a view of giving as close an approximation as can be made with present experience.

Nature of Gun.	Maximum Penetrations in						Remarks.
	Earth.	Concrete.	Brickwork.	Rubble Masonry.	Massive Granite. *a.*	Iron Plates. *b.*	
	Feet in.	Feet in.	Feet in.	Feet in.	Feet in.	Inches.	
12″	50 0	15 0	15 0	10 0	..	15	*a* The destructive effect of a shot, in fracturing and disintegrating a structure of massive granite, extends far beyond the limit of actual penetration.
10″	45 0	14 0	14 0	9 0	..	14	
9″	40 0	12 0	12 0	8 0	2 0	11	
8″	35 0	11 0	11 0	7 0	..	10	
7″	30 0	9 0	9 0	6 0	..	9	
110-pr.	28 0	8 0	8 0	5 6	..	6	*b* The thicknesses given are those of single plates, which are just capable of keeping out a shot.
70-pr.	24 0	7 0	7 0	5 0	..	5	
40-pr.	16 0	5 0	5 0	3 0	..	$4\frac{1}{2}$	
20-pr.	12 0	4 0	4 0	2 6	..	4	
12-pr.	5 0	2 0	2 0	1 0	..	3	

Table III.

Table III. shows the probable maximum penetrations of Spherical Mortar Shells impinging with the greatest velocity which they can acquire in air, compiled from various data.

Nature of Shell.	Maximum Penetration in			
	Earth.	Concrete.	Brickwork.	Rubble Masonry.
	Feet in.	Feet in.	Feet in.	Inches.
13″	6 0	1 6	1 6	8
10″	4 0	1 0	1 0	7
8″	3 0	0 8	0 8	5

From these Tables, which, though subject to correction, may be accepted as sufficiently near the truth to be a guide in determining the thickness of parapet of protection necessary to resist a given projectile, it may be concluded—

1st. That the dimensions given to the exterior walls of the magazines in new works for coast defence may be expected to resist the heaviest artillery of the present day.

2nd. To afford protection to magazines on land works, which may be exposed to the fire of 7-inch guns, a greater strength is required than has hitherto been considered necessary.

3rd. As regards vertical fire, the practice of Engineers appears to have been regulated for a long period by the effect of the 13-inch shell. The empirical rule, based upon practice, in use among

French Engineers, lays down the thickness of semicircular bomb-proof arches, "*extradossees en chape*," at the haunches at two-thirds the square root of the span in feet. A Table has also been drawn drawn up under the instructions of the Director of Works (Colonel Jervois' evidence, Quest. 1089), showing the thickness of arches considered by him necessary for given spans.

4th. Foreseeing the introduction of a more powerful vertical fire, and a consequent increase in penetration, the minimum protection of the magazines in the new coast defences has been made up to 6 feet of combined brickwork and concrete, in arches of about a 12-feet radius of curvature—a thickness which is sufficient to resist shells of considerably greater power than those now in use.

5th. It has been considered unnecessary to provide protection against a heavier projectile than the 13″ shell on the land works; the magazines of which are, moreover, capable of receiving an additional protection with little trouble whenever the necessity for it may arise.

6th. The great thickness of earth required to give security against direct fire, and the displacement caused by the explosion of heavy shells, will probably restrict its use in situations where the space for the work is limited, and in such places will render necessary the employment of a material capable of greater resistance.

J. C. A.

APPENDIX No. IV.

MEMORANDA on the Condition of Magazines and other Buildings covered with Earth, in respect to Dampness. On the Probable Causes, and on the means of Prevention by Improved Ventilation.

8th January, 1869.

DURING the inspection of the works under the Loan, by the Committee on Fortifications, in the course of last summer, it was observed that the majority of the magazines visited were damp, notwithstanding the unusual dryness of the season.

The walls felt cold and moist; dry rot had in many cases attacked the woodwork, and on metallic surfaces a considerable amount of dew was visible, the condensation in some cases proceeding so rapidly as to produce a regular succession of drops.

On enquiry it was ascertained that the interior of these buildings was comparatively dry in the cold months, and as far as was known, no defects existed in the roof or walls, which would account for the presence of so much moisture; moreover, the excessive heat and dryness of the season almost precluded the possibility of the dampness arising from such flaws if they did exist. It therefore appeared probable that the dampness was to be attributed to a defective management of the ventilation. The instructions in this respect in the third paragraph of the STANDING ORDERS FOR ARTILLERY MAGAZINES are as follow:—*Magazines are to be aired upon every favourable opportunity (Sundays excepted)*. It is thereby left entirely to the discretion of those who have the immediate charge of magazines, to determine what opportunities are to be considered favourable, and they very naturally in most cases judge that a fine warm day is the occasion to be seized upon. It may somewhat surprise them to be told that this *prima facie* view is wrong, and that magazines and other underground buildings should be aired only when the weather is cold; and should be carefully, even hermetically, closed when it is hot.

As the question is of the greatest importance, it will not be amiss to describe in detail the scientific reasoning which leads to this conclusion.

The transmission of the temperature of the air downwards through the earth's crust is retarded by the degree of non-conductibility of the strata through which the wave of heat or cold has to pass, and is neutralised by the mean temperature of the mass, which acts as a compensating reservoir of constant temperature, opposing all changes either towards excess or diminution.

As the depth below the surface increases, the range of temperature is diminished, and the time of occurrence of the maximum and minimum temperatures retarded. At 1 inch below the surface the diurnal variations of temperature are reduced one half; at three feet they do not exceed half a degree. The annual variation of temperature at Greenwich is indicated in the following Table, deduced from observations made there.

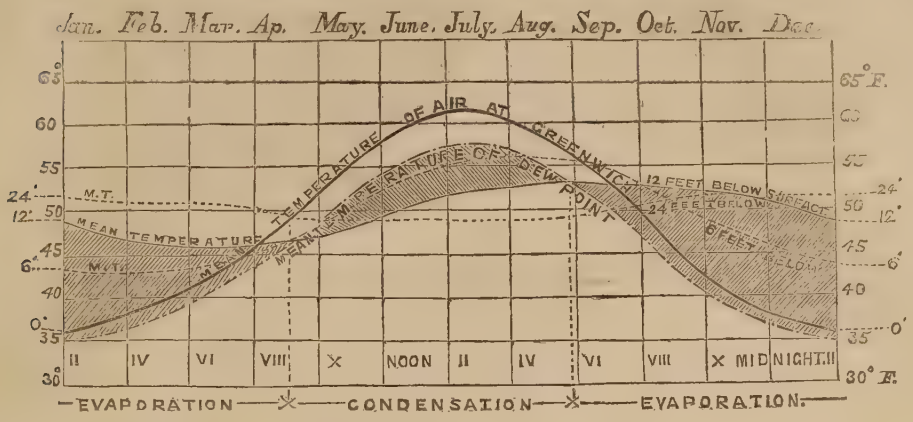
TABLE showing Annual Variations of Mean Monthly Temperatures, at different Depths below the Surface.

Depth Below Surface.	Above Surface.	1-Inch.	3·2 Ft.	6·4 Ft.	12·8 Ft.	25·6 Ft.
Annual Range of Temperature	31°	29°	23°	16°	9°	3°
Time and Amount of Maximum Temperature ..	July 67°	July 66°	August 62°	August 59°	Sept. 55°	Dec. 52°
Time and Amount of Minimum Temperature ..	January 36°	January 37°	January 39°	February 43°	March 46°	May 49°
Mean Annual Temperature	50°	51°	50°	50°	50°	50°

From this Table it is seen that the maximum temperature of the air is reached in July, and the minimum in January; while in a magazine or other building, 12 feet below the surface, the maximum occurs in September, and the minimum in March. The annual range is less than one-third of that in the open air, and the mean annual temperature is the same.

The average temperature of the dew point is from 2° to 10° below that of the air. These various data are graphically shown on the subjoined Diagram.

DIAGRAM showing Annual Variations of Temperature.



The thick line represents the mean temperature of the air; the chain-dotted line underneath, the corresponding mean tempetature of the dew point; the thin black line, the mean temperature of the soil, or of a magazine 12 feet below the surface; the dotted lines, the temperature at 6 feet and at 24 feet below the surface.

It is well known that when air containing moisture in suspension is lowered in temperature below its dew point, a portion of that moisture is deposited; and that when air, even already saturated, is raised in temperature, it becomes capable of taking up a farther amount of moisture.

An inspection of the diagram will show that, from the middle of April to the end of August, the mean temperature of the supposed magazine, 12 feet under the surface, is below that of the dew point. If a current of air at the external temperature be passed through the magazine during these months, it will be reduced in temperature below its dew point, and its superfluous moisture will be deposited in the form of dew on the walls or floors of the building. The magazine becomes in fact a condenser, and every exposed surface will become wet or damp.

On the other hand, between September and April, the interior of the building will be above the dew point, and the external air, when admitted, will, for the greater part of that time, be raised in temperature, and become capable of taking in suspension any moisture which the surfaces of the magazine may contain. The interior will then speedily become dry.

These statements refer to the annual variations of mean temperature, but the diurnal variations are involved, though not of so much importance as the former. The diagram of annual variations will serve to illustrate them, and for that purpose the hours have been added below. As the diurnal range at a depth of 12 feet, is under one-sixth of a degree, the parallels may be taken to represent the temperature of the magazine, to compare with the temperature of the air, as shown by the thick black line.

It is seen, then, that about the 20th of April, when the mean temperature of the external air is 50°, and that of the magazine, which for 24 hours may be considered uniform, about 47°; from 10 A.M. to 7 P.M. the temperature of the magazine will be below the dew-point of the external air; and if it be admitted during that interval, condensation will take place.

On the 1st of October the mean temperature of the air will also be 50°, and the uniform temperature of the magazine 53°, which will be below the dew-point from noon to 5 P.M., during which hours the ventilation should be closed.

Reverting to the system of ventilation as now practised, it is found that magazines are only opened during the day, and in fine warm weather, *i.e.* during the very periods in which condensation will take place, as indicated by the shaded areas in the diagram.

It being clear that this erroneous system affords an adequate explanation for any dampness which may exist, unaccounted for in other ways; it appears necessary that instructions should be drawn up and issued to those in charge of magazines, explaining the correct theory of ventilation, and laying down simple rules for carrying it into practice.

Nearly all magazines are provided with ventilating passages which are, or should be, capable of being opened or closed at pleasure, with air-tight doors or covers. Some have a separate system of ventilation for the hollow passage which usually surrounds them.

Lieutenant Innes, R.E., has described in the 16th Vol. of the Royal Engineer Corps Papers, his successful treatment of a magazine at Halifax, when the defects of the usual system of ventilation were for the first time, it is believed, pointed out by him. He proposes to utilize the separate air passages by opening them in summer, in order to bring the magazines nearer the normal temperature. It is certain that a considerable quantity of moisture would condense in them; and although an equalization of temperature would be advantageous in the case of magazines requiring to be opened frequently, it is a question whether the advantage would not be neutralized by the extent of the inevitable condensation, notwithstanding the success which attended this mode of treatment in the case of the magazine at Halifax. It will probably not be necessary to provide a separate system of passage ventilation where it does not already exist, although it will be desirable to include it in all new designs. It is expected that the numerous cases of dampness which now exist will all be more or less completely remedied by the adoption of a scientific system of ventilation.

Magazines of the ordinary construction have floors of timber. It often occurs that from the length of time required by buildings of massive masonry, to dry thoroughly, dry rot sets in before the floors have been laid many years. Asphalte floors, which exist in certain works, appear to possess a decided advantage over wood in this respect, besides giving the additional head-room due to the height taken up by the wall-plates, joists, and floor boards. It has been objected to, on the ground that moisture condenses on the black surface, but if it be whitewashed, and the ventilation of the magazine properly attended to, this will not be the case; and, taking the most unfavourable view, it is preferable that moisture should be deposited on asphalte, which it cannot injure, and where it can be easily dried up,—than on timber, in which it soon induces decay. It would therefore appear desirable to use asphalte in lieu of timber floors, in all subterranean buildings.

J. C. Ardagh, *Lieut. R.E.*

APPENDIX No. V.

Record of Experiments conducted at Gilkicker Battery, on the 29th December, 1868; and at Shoeburyness, on the 11th and 15th February, 1869.

Two 9-inch 12-ton muzzle-loading rifled guns had been mounted in the two extreme right casemates of Gilkicker Battery, to fire through wooden shields, which had been placed in position, and represented both as to the space they occupied and the size of their embrasures, the iron shields for which the battery is constructed.

In front of and above the right gun iron racers had been fixed from the roof of the casemate, on which a small four-wheeled truck was arranged with pulleys, for lifting the shot from the floor to the level of the muzzle of the gun, and then traversing it round to bring it to any position in which the gun might be after its discharge, preparatory to its being inserted in the bore.

The magazines in which the ammunition, both powder and shot, for these experiments had been stowed, are in the basement floor, which is divided into a number of separate chambers corresponding with the casemates above, and allotted alternately for the storage of shells and cartridges.

Passages run the whole length of the battery, in front and rear of these chambers, separated from them by walls, the front or *powder passage* being 3 feet wide, and the rear or *shell passage* 4 feet wide.

Both sets of chambers are filled in the first instance from the shell passage, into which the shell stores open by a doorway direct, but in the case of the powder magazines or cartridge stores the doors from the shell passage open into lobbies or short passages, separated off from the cartridge stores themselves by a thin brick partition, through the centre of which there is a second doorway. At the further end of this lobby, opposite the entrance from the shell passage, is a *powder hatch* with sliding shutter, through which cartridges are passed into the *powder passage*, whence there are communications by vertical *powder lifts* with the gun floor above.

Recesses have been made at intervals along the shell passage, from which there are vertical *shell lifts* 2 feet in diameter, cut in the piers, and emerging from them on the gun floor towards the rear of the casemates.

The lifts for both cartridges and shells are 13 feet in height, measured from floor to floor.

Speaking tubes at each powder and shell lift enable the gun detachments to communicate with the men on the magazine floor.

The powder passage is lighted by lamps, passed down through apertures in the floor above; and the shell passage, cartridge and shell stores, by lamps passed in to light closets from the outside of the casemates, through tunnels in which they are completely enclosed.

The supply of cartridges from the store to the gun was effected in the following manner:—

One man was stationed in the *cartridge store*, which he had entered from the shell passage, taking care to close the door behind him, and thus to cut off all communication with that passage; one man was stationed in the *powder passage*, at the bottom, and two in the gun casemate at the top, of the *powder lift*. The man in the store having taken a cartridge, weighing 43 lbs., from the metal case in which it was kept, and placed it in the leather case, ordinarily used for conveying it to the gun, carries it into the *lobby*, and closing the door of the cartridge store behind him, then takes it to the powder hatch, through which he passes it to the man in the powder passage, who hands him an empty leather case, with which, after closing the hatch, he returns to the cartridge store to repeat the operation.

The man in the powder passage having received the cartridge in its case, carries it to the powder lift, and attaches it to a snap hook at the end of the rope, which, passing over a pulley above the lift, is held at its other end by two men in the casemate, who immediately open the trap door, used to close the lift, and haul up. When the full cartridge case arrives on the level of the floor it is taken off the hook, replaced by an empty case, which is lowered into the powder passage, the trap is then closed, and the full case with the cartridge in it placed under cover of the pier until required at the muzzle of the gun.

There are thus four distinct stages in the transmission of a cartridge from the store to the gun. 1st, from the *cartridge store* to the *powder hatch*; 2nd, from the *hatch* to the *lift*; 3rd, up the lift, and 4th, from the lift to the muzzle of the gun. The time required therefore for the supply of each cartridge is to be measured, not by the duration of the whole journey, but by that of the longest of the four stages.

The experiments proved that, with a lift of 13 feet, a cartridge could be raised every quarter of a minute, and as all the other operations can be brought up to this speed by the employment of more men, it is evident that one powder lift is adequate to supply one cartridge per minute to four 9-inch guns on the tier immediately above the magazines.

The snap hook was a cause of delay, and it is suggested that an ordinary hook, well closed at the point, would be quite sufficient to carry the cases up and down securely.

If two guns be supplied through each lift, the number of men as detailed above will suffice; if three guns, an additional man will be needed in the cartridge store; if four guns, an additional man in

the powder passage; but if the guns to be supplied were on the upper floor of a two-tiered work, with a single vertical lift of 30 feet, the supply could probably not be maintained continuously faster than at a rate of four cartridges in one-and-a-half or two minutes.

The shells were stowed, standing on end, on the floor of the store, and for their supply men were employed as follows:—One man in the shell store who, with a small truck, like that used by railway porters, lifted a shell, and wheeled it along the shell passage to the foot of the shell lift, where, with the assistance of another man, he placed it in a cage attached to the lower block of the hoist, so contrived that so long as there is a strain on the block the shell cannot fall out. The tackle for hoisting consisted of a double and treble block, with a 3-inch rope, and was worked by four men on the gun floor. These men having hauled the shell up to the level of the gun floor, deposited it in the *shell bearer*, which was ready at hand to receive it. They then lowered the empty cage preparatory to another shell being placed in it.

The *shell bearer* has side handles, and is arranged to be carried, by four men, like a hand barrow; it is provided with hooks which, when it has been carried to the gun, are hooked on to the studs let into the face of the gun to receive them, and which then support the weight of the shell. When in this position the shell is ready to be driven into the bore of the gun, the studs on it being brought exactly opposite the grooves for rifling the gun, by means of corresponding grooves in the bearer.

The operation of conveying the shell from its store to the muzzle of the gun consists, therefore, of three stages, each performed by a distinct set of men. 1st, its conveyance from the shell store to the foot of the lift; 2nd, up the lift; and 3rd, from the top of the lift to the muzzle of the gun.

To test the rapidity with which shells could be brought up from the magazine to the gun floor, the Committee caused 10 shells to be raised. The nine intervals were—2′ 10″, 3′ 20″, 2′, 2′ 5″, 1′ 55″, 1′ 15″, 1′ 30″, 1′ 33″, 1′ 24″; total time, 17′ 12″; mean of nine intervals, 1′ 54″; maximun, 3′ 20″; minimum, 1′ 15″; mean of the last five, 1′ 31″.

The time of raising the shell through the lift, from the moment of commencing hauling to the moment of landing the shell on the gun floor, averaged 28″, the minimum time being 25″. The lowering of the cage occupied about the same time, but as the tackle was new, and the rope stiff, it is probable that after more use the former period will be sensibly and the latter considerably reduced.

The operation which involved the longest delay, and which therefore in this case regulated the supply of shells to the battery, was the moving of the shell from the shell store, and placing it in the cage at the foot of the lift. The width of the shell passage, at Gilkicker, being only 4 feet, and in some parts only 3 feet 6 inches, does not admit of two trucks, of the construction used, passing one another, therefore unless a narrower truck is used, and arrangements made for guiding the trucks past each other, the rapidity of this operation cannot be increased by the employment of more men.

After this experiment, some preliminary rounds having been first fired, both gun detachments (there was one non-commissioned officer and 13 men in each) were ordered to fire five rounds independently as quick as they were able. There was no target, but in consequence of the ships in the offing it was necessary to aim carefully.

The intervals were as follows:—

Rounds.	Left Gun.	Right Gun.
	′ ″	′ ″
1st round	3 0	2 30
2nd „	3 0	2 5
3rd „	2 0	2 25
4th „	1 50	1 50
5th „	3 20	2 0
Totals	13 10	10 50
Means	2 38	2 10
	Maximum 3·20	
	Minimum 1·50	

From a comparison of the rates at which these guns were fired, taking the average time, two minutes, of the five last rounds, which, as the men warmed to their work, were fired quicker than the preceding rounds, with the average rates, 1′ 31″, at which the five last shells were brought up to the gun casemate, it appears that two guns would fire six rounds during the time that would be required to bring four shells up from the shell store.

The detachments employed in these experiments were a fair average body of men, and worked fairly, although not with that rapidity with which the highly trained and experienced men at Shoeburyness are capable of working, but if the rate at which these latter can work the 9-inch gun were taken for comparison, it would appear that only four rounds could be brought up from the store to the battery at Gilkicker, in the time during which six rounds could be fired from one gun, and 12 rounds from two guns, and it therefore results that the arrangements for supplying shells at Gilkicker, as they stand at present, are insufficient for the supply of one gun in action, if it be intended that the shells shall be kept in the shell store until actually required for use.

It is possible that by improved arrangements the rate at which shells may be supplied from the store may be increased, but it is not probable that any arrangement for moving the shells along passages, such as those at Gilkicker, will expedite the rate of supply, so as to make it adequate for the

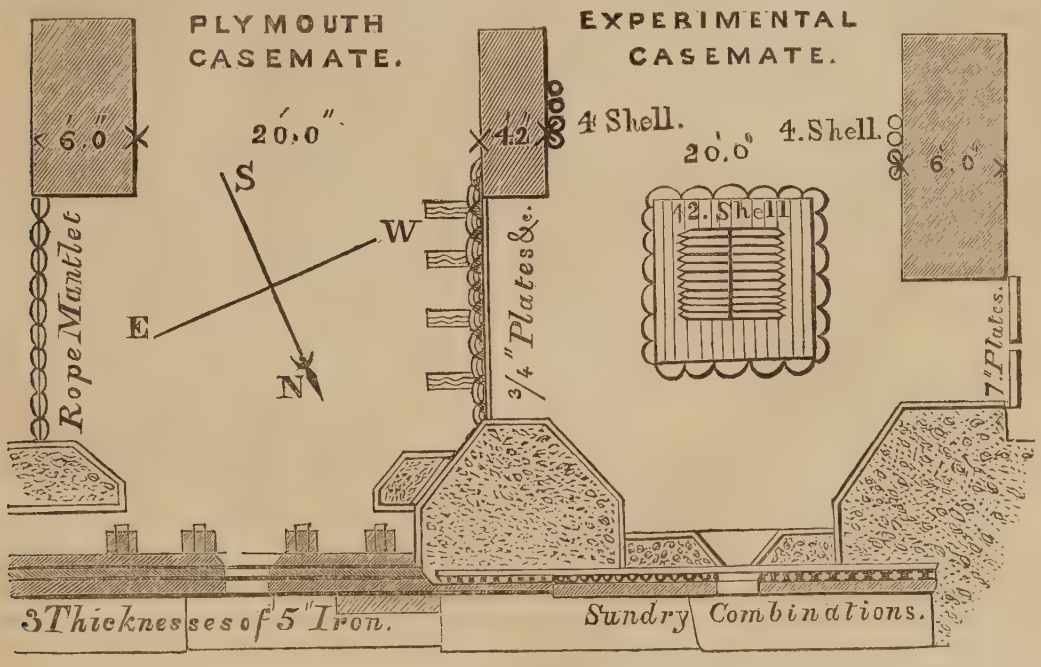
service of two guns in action, even with the moderate lift of only 13 feet, and with the very convenient arrangement of the shell stores existing at Gilkicker, by which the length of passage to be traversed by the shell is reduced as much as possible.

Impressed with the importance of these considerations, and the necessity of making such arrangements in the sea coast batteries as will permit of the guns being fired as quickly as they can be loaded and laid with accuracy, the Committee obtained the sanction of the Secretary of State for War for an experiment at Shoeburyness, to test the amount of risk to be apprehended from loaded shells being struck by shot or splinters, with a view to a supply being kept for immediate use near to the guns on the same floor with them.

Such an arrangement, if it could be adopted with safety, would also lead to economy in the construction of expense magazines, for the storage of shells.

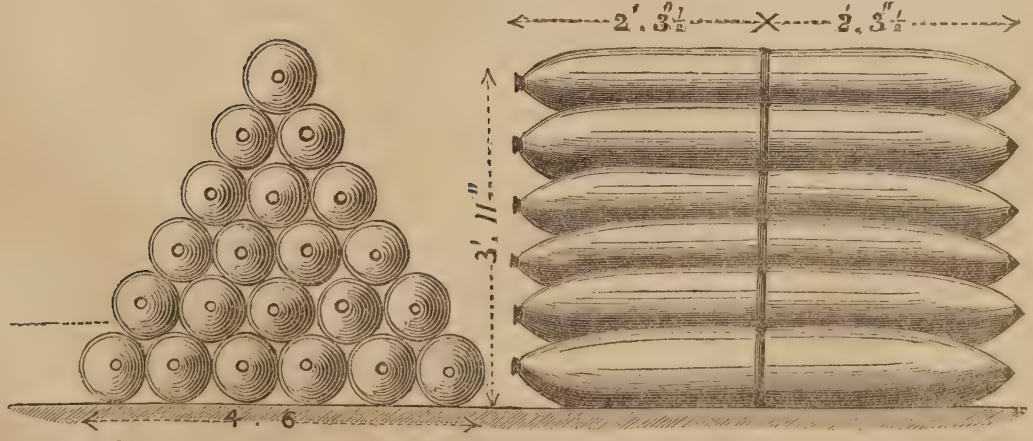
The experiments were made on the 11th and 15th February, 1869.

In the first experiment a pile of 42 shells was placed within the experimental casemate at Shoeburyness, directly opposite the embrasure, upon a raised platform, so that a shot fired through the embrasure might strike the pile near the centre of its base. Eight more shells were arranged on end on the floor of the casemate, close to the rear piers, four on either side: those being the most probable positions in which they would be placed, for actual service, after being raised by the lifts.



PLAN OF CASEMATES.

Scale 10'=1".



SIDE ELEVATION. END ELEVATION.

PILE OF SHELL.

The shells used were common 9-inch rifled cast-iron shells, weigning about 232 lbs. when empty, and were each filled with 18 lbs. of powder, and plugged.

A 9-inch gun was fired at the pile, at a distance of 70 yards, with a full charge of 43 lbs., and a Palliser shell weighing 244 lbs. loaded with 5 lbs. 4 ozs. of powder.

On the firing of the gun apparently only one explosive report came from the casemate, which was very violent and very loud.

Upon examination after the explosion it was found that 19 shells out of the 50 which had been placed in the casemate had exploded; 14 were still within the casemate, 10 having been thrown with violence to different parts, and the other four, which had been placed standing on end, by one of the pier walls, being scarcely disturbed; 10 were thrown from three to five yards to the rear of the casemate, comprising the four which had been placed near one of the piers; three were driven about 10 yards to the rear, one about 20 yards, and one about 30 yards; two lay outside the south side, five and 10 yards distant from the casemate, having been driven through the arch in its pier wall.

That some of the shells had been struck very hard without exploding was evident from their having deep indentations upon them, and one having been cracked. The result of the explosion upon the casemate was very severe; although it had been very much damaged and shaken, by the firing which had been made against it in previous experiments, the force of this heavy explosion of 342 lbs. of powder, in 19 shells, did not bring down the arch, but only shook it very considerably.

Splinters of the shells were driven to a considerable distance, some having been picked up at 200 and 400 yards from the casemates on its flanks.

It appears probable that the whole of the 19 shells which exploded had been in the pile, and that they were those with which the Palliser shell that was fired, came in immediate contact.

In the experiment on the 15th February, eight common loaded shells of the same description were placed on their bases, with clear intervals of two inches between them, on a raised platform within the casemate, opposite to the embrasure, 18 feet from it; three more shells in a similar position, at the same intervals, but six inches in rear of and eight inches higher than the front row, and a single cracked shell two feet in rear of one end of the front row.

Ten more shells were placed on their bases in a row, on the floor of the casemate, close along the rear pier wall on one side, and nine in a similar position on the other side.

The same 9-inch gun was fired with a Palliser shell, weighing 243 lbs., loaded with 5 lbs. 12 ozs of powder, at a distance of 70 yards, but with a reduced charge of 29 lbs., to represent the effect of a battering charge at 1,000 yards.

Aim was taken at the centre of the front row. The result was the explosion of all the shells in the centre of the casemate, except that which had been previously cracked, and also of the second from the front of the shells which had been placed near one of the pier walls. One of the same row was badly cracked, and several others were marked by splinters.

Of the 31 shells which had been in the casemate, 12 had exploded, containing 216 lbs. of powder; one was cracked; four of the nine at the foot of one pier had been thrown down; one from the row of ten at the foot of the other pier burst; another was projected 15 feet in rear of the casemate; and one to within a few feet of the embrasure; the remaining eight lay in a group near the outer end of the pier.

The general result of these experiments tends to show that common cast-iron shells, loaded and plugged, will explode when struck direct by heavy projectiles, but that there is little risk of their explosion from the effect of any except large splinters.

Considering also the weight of the bursting charges of these shells, as compared with those of Palliser shells, and their different construction, it seems certain that these latter (the Palliser) shells may be stored with safety in any position not exposed to direct fire; it is to be observed also that one of these shells would explode with much less violence than a common shell, and therefore, although it is desirable on account of their large bursting charges that but very few common shells should be kept in a battery at hand, ready for immediate use, there is no objection to Palliser shells being so kept; and with a view to maintaining a rapid fire, which is so essential from coast batteries, especially for the defence of channels, arrangements should be made by which a fair proportion of shells should be kept on the same level as the gun floors, in or near the gun casemates ready for immediate use, thus obviating the necessity of bringing up every round, as required, from the magazines.

These arrangements should be so made that the shells should by no possibility be subject to be struck directly by shot or shell, and when placed outside the casemate, should be weather-proof: in all cases the shells should be well secured under lock and key, to prevent them from being tampered with.

In the course of the experiments at Gilkicker the Committee had an opportunity of seeing a "shell carrier" tried, proposed by Mr. Cunningham, consisting of a clip sling, which is readily fitted on the shell when in a horizontal position, and a small truck on a pair of wheels, having two hooks, which hook into eyes in the sling. By bearing down the handle of the truck the shell can be easily raised off the ground, and run along the floor by a single man; when it arrives near the muzzle the sling is attached to the tackle on the traveller, the shell is then hoisted and transferred to the muzzle of the gun, into which it is entered a short distance sufficient to give it support, when the sling is detached and taken back for another shell.

This arrangement had a great advantage over the ordinary shell bearer, requiring only one man instead of four men to move the 9-inch shell, weighing 250 lbs., from the top of the lift to the gun. This appears to the Committee a great advantage, as dispensing with the services of a number of men, who are employed at very heavy slow work, in the rear of the casemate, where they are most exposed; in this operation they occupy so much space, that if more than two guns had to be served from the same lift, confusion and accident would probably arise in the heat of action, which would be most inconvenient, and would probably retard the fire of the guns.

This inconvenience would undoubtedly be greatly diminished by the shells being conveyed along the floor of the casemate, by a single man with a small hand truck, but it is most desirable that some contrivance should be made to supply a defect in Mr. Cunningham's arrangement, by affording, as in the case of the ordinary shot bearer, means for guiding the studs on the shells into the grooves in the bore of the gun.

Mr. Cunningham contemplates that his arrangement might be equally used on the magazine floor for carrying the shell from the store to the lift, so that the sling should be placed on each shell in the store, and not removed before it reaches the muzzle of the gun. In this case the sling would have to be brought back to the store after each round. The constant transfer of these slings between the gun and magazine floors appears likely to cause confusion and delay, and it therefore appears desirable that the working on each floor should be entirely self-dependent.

The Committee are of opinion that the present shell bearer, as used at these experiments, is totally unfitted for the supply of shot or shells exceeding 250 lbs. in weight, and therefore when heavier guns are employed bearers on trucks must be adopted.

Lighting.—The arrangements for lighting were perfectly secure, and where candle lamps were used with candles having three wicks, the light was ample, and there was no necessity for trimming.

The Committee observed, however, that alterations were in progress to admit of the lamps being inserted into the light closets along tunnels, perforated through the exterior walls of the casemates, and crossing the shell passage.

The Committee are of opinion that this precaution is in excess of what is necessary to guard against accident, as they see no objection to the lamps when lighted and with their doors closed being carried along the shell passage, deposited directly in lamp closets, made for their reception, and there shut up before the shell stores or magazines are opened for the service of the guns. This appears the less objectionable, as powder is never carried along this passage, except when the magazine is being filled and the battery not in action, and after all the carrying of a well-guarded light along this passage cannot be more dangerous than running a truck, with iron wheels, along it laden with a heavy shell.

The employment of candles also is a safeguard, as it gets rid of the inconvenience of trimming to which the best of oil lamps are always subject.

APPENDIX No. VI.

Extract from Report of the Commission appointed for Improving the Sanitary condition of Barracks and Hospitals.

"Casemates, as a general rule, form the worst kind of barracks for anything but temporary "purposes, or for occupation during a siege. At the present time they form part of the current "barrack accommodation in garrisons where there are defensible works. They are usually con- "structed in a series of arches behind the curtains or in the flanks. They vary considerably in "character; some are lofty, tolerably well lighted, and have certain means of ventilation, generally "by some opening opposite the door, which, if sufficiently made use of, subjects the inmates to the "inconvenience of living in a gusty archway; others are low, narrow, dark, and without means of "renewing the air.

"Some casemates are hollowed out of the rock, as, for example, those at Dover Castle. The best "examples of habitable casemates are those at Dover Citadel, and Prince of Wales' Redoubt at "Plymouth. The worst are the casemates at Fort George, Dover Castle, Chatham, and Carlisle Fort "Cork Harbour. Casemates vary considerably in length, breadth, and height. The loftiest are those "in Dover Citadel, which have an average height of 13 feet. The longest casemates are those of "Dover Castle, which vary in length from 100 feet to 227 feet. They are cut out of the chalk cliff, "and are lighted at one end only. They are not fit for ordinary occupation; on emergency, during "a siege, they might possibly save life; at other times they are rather calculated to destroy life by pro- "ducing sickness.

"The manner of construction of this class of accommodation has apparently been determined "more from considerations of protection than of health. The question is one which deserves most "serious consideration, because if the fortifications proposed by the Defence Commission are to be "constructed, the troops located in the several forts will inhabit casemates, and if proper care be "taken in their construction these casemates may form a valuable accession to barrack accommodation. "If not, they will injure the health of the men placed in them. It is possible to realize both object "of health and protection, as has to a considerable extent been done in the Citadel casemates at "Dover."

APPENDIX No. VII.

ARMAMENT RETURN.

SHOWING the number of Heavy Rifled Guns required for the Armament of Sea Batteries, erected, or in course of erection, under the "Loan Of Defences."

NOTE.—A portion has already been supplied and mounted.

	Name of Work.	Description of Gun. 12" of 25 tons.	10" of 18 tons.	9" of 12 tons.	7" of 6½ tons.
PORTSMOUTH	1. Horse Sand Fort	10	24	25	..
	2. No Man's Land Fort	10	24	25	..
	3. Spit Bank Fort	4	9	..	6
	4. St. Helen's Fort	4	6	..	4
	5. Puckpoòl Battery	4	..	..	..
	7. Gilkicker Battery	5	17	5	..
	8. Southsea Batteries	1	..	22	9
	9. Hurst Castle (Plan A)	6	..	61	..
	12. Needles Battery	..	..	2	4
	13. Hatherwood Battery	..	..	4	3
	14. Warden Point Battery	..	..	4	4
	15. Cliff End Batteries	..	..	20	..
	20. Sandown Fort	..	..	18	10
PLYMOUTH	34. Bovisand Battery	..	14	9	..
	35. Plymouth Breakwater Fort	4	18	..	..
	36. Picklecombe Battery	..	19	19	4
	38. Mount Edgecumbe Battery	..	..	7	..
	39. Drake's Island Batteries	5	..	21	..
	61. Fort Stamford	..	..	7	..
PEMBROKE	65. Stack Rock Fort	6	16	..	7
	66. South Hook Battery	..	..	5	15
	67. Hubberstone Battery	..	1	11	15
	68. Popton Battery	..	1	13	14
	69. Chapel Bay Battery	..	..	6	..
	71. St. Catherine's Fort	..	..	3	8
	72. Proud Giltar Battery	..	..	..	2
	73. East Moor Battery	..	..	..	4
	74. Trewent Battery	..	..	..	5
	75. Freshwater West Battery	..	..	..	4
PORTLAND	77. East Weir Batteries	..	..	27	..
	79. Portland Breakwater Fort (Plan A)	..	* 14	15	..
	80. Nothe Fort	..	6	4	..
THAMES	81. Coal House Fort (Plan A)	..	* 28	..	..
	82. Cliffe Fort (Plan A)	..	* 20	..	..
	83. Shornmead Fort (Plan A)	..	* 20	..	..
	84. Slough Fort	..	..	..	7
MEDWAY	85. Grain Fort	..	11	4	..
	86. Grain Battery	..	..	10	..
	87. Garrison Point Battery	4	..	36	..
	88. Hoo Fort	..	..	11	..
	89. Darnet Fort	..	..	11	..
	91. Queenborough Battery (Plan A)	..	..	* 2	..
	92. Cheney Battery (Plan A)	..	..	* 2	..
CORK	100. Spike Island	..	4	12	..
	101. Carlisle Fort	..	4	3	12
	102. Camden Fort	..	..	8	6
		63	256	432	143
	General Total	..	..	894	

* ALTERNATIVE PLANS:—

Portland	B. 14, 10-inch	C. 8, 12-inch.
Coalhouse	„ 20, 10-inch	„ 14, 10-inch.
Cliffe	„ 13, 10-inch	„ 10, 10-inch.
Shornmead	„ 14, 10-inch	„ 10, 10-inch.
Queenborough	„ 2, 9-inch.	
Cheney	„ 2, 9-inch.	

WM. F. DRUMMOND JERVOIS.

16*th March*, 1869.

APPENDIX No. VIII.

LOAN FOR DEFENCES.

RETURN showing the Works in which it is proposed to adopt the Moncrieff Gun Carriage system; the Armament, nature of Defence for the Guns, and Cost of the Designs as previously approved, and as proposed to be modified according to Moncrieff's System.

NAME OF WORK.	Work as Proposed to be Executed previous to Captain Moncrieff's Invention.					Design, as modified, for the introduction of Captain Moncrieff's Gun Carriages.						Saving.	Excess.	REMARKS.
	Armament.				Estimated Cost including Turrets and Shields.	Armament.				Cost of adapting Work.	Total Cost.			
	Iron Casemates.	Granite Casemates with Shields.	Open Batteries with Shields.	Open Batteries without Shields.		Moncrieff's Gun Pits.	Iron Casemates.	Granite Casemates with Shields.	Open Batteries without Shields.					
					£					£	£	£	£	
Puckpool (30 Mortars)	..	..	4	1	28,964	4	..	..	1	2,824	23,688	5,276	..	
Southsea	..	..	23	9	75,879	23	..	..	9	6,862	47,716	28,163	..	
Hurst (3 Turrets)	..	61	(6 in turrets)		269,271	4	..	61	..	8,302	217,573	51,698	..	The estimated cost includes 60,000*l.* for Turrets.
Cliffe End	..	..	..	20	32,714	12	..	..	8	2,700	35,414	..	2,700	
Sandown Fort	..	18	..	10	73,876	10	..	18	..	3,090	76,966	..	3,090	
Drake's Island	..	21	..	5	62,108	5	..	21	..	1,416	63,524	..	1,416	
Hubberstone	..	11	..	16	73,615	8	..	11	8	6,068	79,683	..	6,068	
Popton	..	11	..	17	75,636	6	..	11	11	4,968	80,604	..	4,968	
East Weir	..	..	..	27	..	10	..	..	17	2,070	..	..	2,070	
Coal-House Fort	28	..	..	..	A. 211,063	8	12	..	..	B. ..	163,179	47,884		Should the Thames Forts be constructed according to design C, a further saving of 48,271*l.* will be effected.
Cliffe	20	..	..	..	A. 162,937	6	7	..	..	B. ..	124,815	38,122	..	
Shornmead	20	..	..	..	A. 147,705	5	9	..	..	B. ..	115,753	31,952		
Grain Fort	..	..	..	15	114,714	15	..	..	..	5,886	120,600	..	5,886	
Grain Battery	..	..	..	14	31,734	10	..	..	..	3,400	35,134	..	3,400	
Queenborough	2 Guns in a Turret.				30,853	3	..	..	..	4,024	14,877	15,976	..	The estimated cost includes 40,000*l.* for Turrets.
Cheney	2 Guns in a Turret.				30,528	3	..	..	..	3,298	13,826	16,702	..	
Spike Island	..	..	16	..	41,313	16	..	..	..	5,764	23,077	18,236	..	
Carlisle	..	..	16	..	111,499	16	..	..	..	6,556	94,055	17,444	..	
Camden	..	..	10	4	83,231	8	..	..	6	2,696	70,927	12,304	..	
	68	122	69	138	1,657,640*	172	28	122	60	69,924	1,401,411	283,757	29,598	
			10 in turrets.									29,598		
	Total, 407.					Total, 382.								
Saving by Moncrieff's System												254,159†		
For comparison with the Schedule of the Report, deduct for turrets at Hurst Castle, not included therein ..												60,000		
Saving on Works enumerated in the Schedule of the Report												194,159		

* This sum includes 100,000*l.* for turrets at Hurst Castle, Queenborough, and Cheney, which have not yet been sanctioned.—W. F. D. J.

† From this saving must be deducted the extra cost of the Moncrieff carriages.

WM. F. DRUMMOND JERVOIS,
15*th March*, 1869.

Report of the Committee appointed to enquire into the Construction, Condition, and Cost of the Fortifications, erected, or in course of erection, under 30th and 31st Vict., and previous statutes.

Presented May 3rd, 1869.

MINUTES OF EVIDENCE.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
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1869.

MINUTES OF EVIDENCE

TAKEN BEFORE THE

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MINUTES OF EVIDENCE.

TAKEN BEFORE

THE COMMITTEE APPOINTED TO ENQUIRE INTO THE CONSTRUCTION, COST, &c., OF WORKS AND FORTIFICATIONS IN THE COURSE OF ERECTION UNDER THE LOAN FOR DEFENCES.

Thursday, 30th April, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*
Major-General C. DICKSON, C.B., V.C., R.A. | Colonel H. D. HARNESS, C.B., R.E.
Major-General J. L. A. SIMMONS, C.B., R.E.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Brigadier-General JOHN HENRY LEFROY, R.A., examined.

Brig.-Gen. J. H. Lefroy, R.A.
30 April, 1868.

1. (*President.*) I believe you are President of the Ordnance Select Committee?—Yes.

2. How long have you held that office?—I have been President of the Committee for four years. I was Secretary for three years before that. I have been connected with the Committee since the beginning of 1860.

3. Since 1860 have you had an opportunity of witnessing all the important experiments which have been carried out as to the penetration of heavy shot and the resistance of iron plates?—Yes, I have seen nearly all the important experiments. They were not actually conducted by the Ordnance Select Committee during a large part of the time, but still I witnessed them.

4. There have been great changes, and great advance has been made in the power of artillery since 1860, when the forts now in progress were designed. Can you give the Committee a short statement of the course of that advance and the progress which has been made?—I think the most concise mode of answering that question will be to give the Committee the dates at which the successive large guns were issued for experimental purposes to the School of Gunnery. I have made a memorandum of the dates, and if you will allow me I will read it:—Armstrong's B.-L. 80 pr. of 65 cwt., 6·0-inch gun, August 18, 1859. Lynall Thomas' M.-L. 7-inch gun of 133 cwt., August 23, 1860. Armstrong's B.-L. 7-inch gun of 81 cwt., December 21, 1861. Armstrong's S.-B. 150-pr. of 12 tons, 10·5-inch calibre, February 6, 1862. Armstrong's shunt rifled 7-inch M.-L. gun, February 13, 1862. Whitworth's 7-inch gun, September 1, 1862. Armstrong's S.-B. 100-pr. of 6¼ tons, 9·22-inch calibre, October 16, 1862. Armstrong's rifled 300-pr. of 12 tons, 10·5-inch calibre, December 10, 1862. Royal Gun Factory 9-inch gun of 16 tons, rifled on Lynal Thomas' plan, March 12, 1863. Armstrong's 600-pr. of 23 tons, 13·3-inch calibre, April 18, 1863. These dates furnish the Committee, perhaps with the best criterion of the rate and progress of our experience in respect to the power of large guns. Targets representing the "Warrior" and "Minotaur" were fired at in July 1862, and the smooth-bored 150-pr. employed, but with one exception the shot were cast-iron: that one was wrought iron. Steel was scarcely employed before 1863. The point from which the Commissioners on Fortifications in 1859 started, was the power of the 68-pounder gun, which we will imagine to have been firing steel shot; it did not do so in reality, but it might have done so, and the absolute total power of that gun is represented by about 868 foot tons, or reduced to per inch circumference 35 foot tons. Now, the guns of the present day, even those of a weight which is not at all immoderate or difficult to manage, exceed this enormously; for example, the 10-inch gun which has just come into the service will strike a blow, at 200 yards, of about 4,430 foot tons, or its power per inch of circumference is about 142

Brig.-Gen. J. H. Lefroy, R.A.

30 April, 1868.

foot tons. We may therefore say that the service itself now has guns which will deliver on a given surface a blow nearly five times as great at 200 yards distance as was delivered by a 68-pounder; but when referred to greater distances the disparity is very much increased, because the guns of the present day carry their force and velocity much further. The progress made has not only been in guns, but it has largely been a progress in projectiles: the introduction of a harder material and of forms more suitable for penetration has, more than anything else, given guns their present power.

5. I find in this paper that has been drawn up, an American Rodman gun alluded to; what is the power of that gun at 1,000 yards, a 15-inch gun?—I cannot give it you exactly. The question turns very much upon the charge with which the gun is used, about which there are material differences of opinion. There is no doubt as to the American gun, that it was never contemplated using it with more than 50 lbs. of powder; but they appear to have altered their views, and now announce that they intend to use 100 lbs. of powder as its charge. If such is the case, the total force of the gun at 1,000 yards will be represented by 4,439 foot tons, and the penetrative effect per inch of circumference by 95. We have, however, no reason to suppose that the employment of 100 lbs. has been authorized by any responsible authority.

6. In order to calculate what that power is, it is necessary to take into consideration the circumference of the shot?—Yes.

7. I find it stated here that the energy of the shot per inch of circumference would be 89 foot tons, while that of a 10-inch gun would be 123 foot tons?—Yes; those figures are correct for a distance of 1,000 yards, if the American gun has only a total force of 4,212 foot tons, instead of 4,439; these slight discrepancies, which arise from the use of slightly different data in the different calculations, do not affect the general result.

8. (*Major-General Simmons.*) Are there any other guns which you are aware of, that are in the possession of any foreign power, which would have a greater power of attack than those you have now mentioned?—There are certainly none now in the possession of any foreign power. The Americans have made a very small number of guns of 20-inch calibre, certainly not more than 10. I think they have made 10, but only one of them, to the best of my information, has ever been fired at all, and they can hardly be considered to have any effective existence; they are at present rather experimental than anything else. The Russian Government has purchased in America some guns of the 15-inch bore, as we are informed, which are the same as those which we spoke of just now. The French have guns of 10·6-inch bore, but they do not exist in their services; they are guns as to which one or two experiments have been made, but they do not yet, to the best of my belief, form part of any armament.

9. Is that a rifled gun?—Yes; a rifled breech-loading gun, intended to fire shot of about 500 lbs.

10. Have you any knowledge of what the energy of a shot is fired from that gun, or what service charge, as used by the French artillerists, would be?—No; we are not sure of the charge with which it is to be used; if, however, it is 55 lbs., as I have been informed, we may expect at 1,000 yards a total energy of 2,450 foot tons, or 75 foot tons per inch of circumference. I here assume the French powder to be materially weaker than ours, as appears from all our comparisons to be the case, and that the above charge only gives an initial velocity of 935 feet.

11. (*Colonel Harness.*) Do you remember of the guns you have mentioned, which was the first rifled gun whose fire was superior to that of the 68-pounder against iron?—The first, in point of time, that showed any great superiority, was Mr. Whitworth's 7-inch gun. I think it was the first: that is, comparing guns of something like an equivalent weight. I should not compare that gun with a gun of 12 tons. The relative power of the rifled and smooth-bore guns was a good deal disguised by the short distance at which the practice was carried on, as the smooth-bored shot carried its velocity as far as that very effectively; but had the distance been 300 instead of 200 yards, the advantage would have been all through with the breech-loading 7-inch gun; but being 200 yards instead of 300, the 68-pounder just held its own; but then both guns suffered a great disadvantage from almost all the early experiments being made with cast-iron shot, which afforded hardly any means of comparison.

12. Do you recollect the experiment that was made against the Thorneycroft shield?—Yes, I do; it was in September 1860.

13. Do you remember what gun was used in comparison with the 68-pounder?—There were ten shots of homogeneous iron, or wrought iron, fired from the breech-loading 80-pounder gun, and some from a 40-pounder and 20-pounder. The rest were from smooth-bored 68-pounders and 32-pounders. But perhaps I may mention in connection with this question, that the public attention at that time was very little directed to the power of rifled guns. It was entirely centered upon their range. Everybody was thinking of ranges of four or five miles, because Mr. Whitworth threw a shell 9,000 odd yards; the power was taken for granted, and the range was most thought of.

14. (*Major-General Simmons.*) At what date was attention first directed to improving projectiles by adopting other metals in preference to cast-iron?—That subject has always been kept in view from the period of the first Committee that was appointed, as early as 1859, which was called the Committee on Rifled Guns and Iron Plates. They made use of shot composed of homogeneous iron, as it was termed, and puddled steel; but the great expense of the projectiles and their bad quality prevented any great attention being directed to them. From the commencement of the iron-plate experiments under Sir John Hay's Committee, there have been always introduced here and there experimental shot of different materials; but it was not until July 1863 that Major Palliser called attention to the combined effect of a very hard material and a pointed form, and then commenced the experiments which have given us this effective and cheap chilled iron shot.

15. (*Colonel Harness.*) Is the chilled iron shot actually as good as the steel, irrespectively of expense?—It is very much better.

16. (*President.*) Do you mean that it would have more penetration?—It would have far greater penetration. We have hardly ever had steel shot that have not in some degree altered their form, particularly when they had a pointed form. Chilled

iron shot have gone through 7 inches of iron without any perceptible effect on the point, although the body is frequently broken.

17. (*Major-General Simmons.*) Does that hold good as to shells?—Yes, equally; only in order to enable a shell to resist such a concussion as that it must be a very thick one, which is a bad shell as such, as it contains very little powder.

18. (*Major-General Dickson.*) You would not recommend them for shells generally?—Not for employment against wooden structures or masonry: but for action against iron-clad vessels, I recommend them, even as shells, and for two reasons; they are rather longer, and better, in point of accuracy, for being hollow, and the effect of even 3 lbs. or 4 lbs. of powder is not to be despised if it once gets inside a ship.

19. (*President.*) Do you contemplate that heavier guns than those you have already alluded to are likely to be brought against any forts by land attack?—The heaviest gun that we in our service contemplate entering into any siege-train at present is the 7-inch breech-loading gun of about 72 cwt. The heaviest gun that we have actually had is a 64-pounder breech-loading gun of 61 cwt., and I think it is very improbable that any army will carry into the field, or on the march, guns heavier than these. In the attack of a maritime fortress, like Sebastopol for instance, if it were worth while, larger guns could easily be brought up, but I do not anticipate that any inland fortress will ever be attacked by larger guns than that.

20. (*Major-General Simmons.*) I suppose we may consider that a 7-inch gun is the limit of artillery for the attack of land defences, where the communications would render it difficult to bring up heavier guns, or where you had not got any close at hand?—One is unwilling to lay down any limits; if it should be expedient, on a balance of advantages, to bring up a bigger gun, it could be done. In these days the powers of locomotion are very much increased; however, I do not anticipate any such thing. If, for example, the Italian Army had had to attack any of the fortresses in the Quadrilateral, I think that they would not have had any guns heavier, and probably none so heavy.

21. (*President.*) Taking, for example, the forts on Portsdown Hill, you would not anticipate that they would be attacked by heavier guns?—No; nor with guns nearly so heavy. I do not think that an enemy could move through a hostile country, where there was a brave population resisting them, guns of that weight. Being so large they would require many animals to move them, and they are easily checked at every point. Much, however, would naturally depend on the command the enemy might have of the railway communication.

22. (*Major-General Dickson.*) Without railways it would be utterly impossible to move them along?—I don't say impossible in a country of good roads, but all the difficulties increase enormously; large guns cannot travel on their fighting carriages, but must be transported separately. The train of wagons to bring up a full complement of ammunition and projectiles, stretches in the same proportion. The gyns, tackle, machines, and stores for all operations require to be heavier and more bulky, and the end must be that the siege train, which is at best a great incumbrance, will become unmanageable from its weight, extent, and the number of animals required to move it.

23. (*President.*) Have you considered the construction of forts, such as that of which there is a model before us, showing Garrison Point at Sheerness, with a view to their resisting an attack from such heavy guns as heavily-armed ships might bring against them?—Such a question as that has, of course, been the subject of universal discussion and consideration. Officially I have not had occasion to do so, and I cannot speak in any way as to the quantity of iron in those shields; but I have naturally given more or less attention to the subject. The impression which I have always derived from these constructions is, that they are not invulnerable, as it was stated they would be, but they afford an amount of resistance which I think is likely to enable them to beat off any attack which may be brought against them.

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24. What thickness of granite should you consider it necessary to have to resist the fire from such a gun as you have alluded to, viz., the 18-ton gun, at close quarters?—I should say that ten or twelve shots from the 18-ton gun, striking any one of those piers (pointing to the model), would reduce it to ruins. The granite pier in 1865 received 22 shots, representing in their aggregate effect 15 10-inch shot, at 600 yards. I should expect a more rapid destruction from a succession of shots all of equal power.

25. They are 14 feet thick, are they not?—Yes, I believe they are. The shot would strike out the exterior stones, and the stones above them would drop down from their own weight, and a few shells planted upon them afterwards would complete the work. Of course that implies that the shots strike at about the same place. A single shot striking there (pointing to the model) would breach the granite, and crack it through the front course of stones: and very likely crack by concussion the course of stones behind, although it would not very much diminish the resistance, because the stones must be brought away to do that.

26. Do you consider that the piers, as shown in the model, are sufficiently strong to resist such an attack as they might be exposed to?—I think it is to be regretted that we are so far committed to granite constructions as to expose such a surface of masonry as that at all. The result of the experiments against the granite casemate at Shoeburyness, three years ago, to which I have just referred, showed that it could be breached and ruined much more easily than had been supposed; but then it was by an extremely concentrated fire, and guns were not replying to the attack. The attackers were not on a floating surface, or an unsteady platform, or impeded by smoke from either side. The shot were carefully and exactly aimed at the point where they could do the greatest harm, but in a regular attack it would be a mere matter of chance where they struck.

27. I believe that the forts intended to be constructed at Spithead are to be for a certain distance above high-water mark, I think 15 feet, constructed of granite, and preparation is made for putting iron in front of that granite, if that should be found necessary hereafter. Do you consider that in such a position as that, exposed to a concentrated fire, iron plates outside the granite would add very much to the resisting power of the forts?—Yes; I think that iron plates outside the granite do add materially to the resisting power: they do not prevent the granite from being fractured, but they keep it together. We have had very large granite blocks split completely through by a blow on the outside of the sheet of iron, but it does not penetrate. Therefore I apprehend that blocks of granite,

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however large, in the basement and the front, receiving a concussion from the blow of a heavy shot, would be split through; but unless brought away, I do not think that it would materially affect the strength of the structure. The effect is that you reduce them to small blocks, but there they are still.

28. Would not that concussion and the fracture of the granite be prevented by the interposition of some elastic substance, such as teak, between the iron plate and the granite?—There is very little experience to show whether it would be so or not. I think it would probably be so.

29. I find that that question appears to have been gone into by the last Committee which sat upon the Malta and Gibraltar shields—the interposition of teak; and I find also that several of the witnesses examined before that Committee expressed a favourable opinion of it, except that it would be introducing a perishable material. Is that your opinion?—I was examined before that Committee, and the question was put to me, but only in reference to iron shields. I think, apart from the question of the perishable nature of the material, it would afford a very material protection. Anything in the nature of a buffer, that made a shot less local in its effects, would be serviceable; but that might be determined by experiment.

30. I find, also, that in the evidence given by Admiral Robinson, he stated that he considered that, in order to offer resistance to different kinds of guns, you might take it as a rough and general rule, that you must have a plate of the same thickness as the diameter of the gun brought to bear against it; for instance, that a 5-inch plate would resist a 5-inch gun, and a 6-inch plate a 6-inch gun, and so on. Therefore, if he wanted to defend a fort against a 9-inch gun, he should like to have a plate of 9 inches thick. Do you concur in that opinion?—Everything depends upon the nature of the support to the plate. A 7-inch shot has penetrated more than its own diameter into an 8-inch plate, well backed, with a striking velocity due to nearly 800 yards distance, and into a 10-inch plate unbacked, with a striking velocity due to 70 yards. In the last example the point reached a depth of 8·5 inches. An 8-inch plate, well backed, is not penetrable by a 7-inch gun. I believe, also, that it has not been penetrated by an 8-inch gun. It has been penetrated by a 9-inch gun, hitting it directly and truly, perpendicularly to the surface. But that is a practical condition of things which, in a real engagement, would very rarely be realized; the loss of power by any obliquity of the shot is very material. I should therefore say, with regard to the rule in question, that if it contemplates such a backing as is necessary in floating structures for the support of the plate, it is approximately correct; but not so of unbacked plates such as we may have in shields. It would be possible to drive a shot through a thickness considerably exceeding its own diameter.

31. At what range did the penetrations you refer to occur?—At 70 yards range; but the charge of the 9-inch gun was reduced to represent, I think, 400 yards. The object of firing at so short a distance as 70 yards was merely to strike the precise place intended to be struck.

32. (*Colonel Harness.*) What is the calibre of the 22-ton gun?—The calibre is not absolutely settled. There is a question still open about that; but I think it will be 12 inches.

33. What has a shot fired from that gun penetrated?—The 12-inch gun has not yet been fired at any iron plate or target. The 13·3-inch gun fractured an 11-inch plate; it did not actually penetrate it, for this reason, that the plate was a small one, and the line of least resistance was not straight through, but towards the edges, so that it split it in two parts; from the nature of the blow and the disposition the disc behind showed to come away; and I have no doubt that, had it been the size of our other plates, it would have been penetrated; it was a spherical steel shot of 344 lbs., and struck with a velocity of 1,589 feet per second, The distance was 200 yards.

34. From the 300-pounder?—The gun was called the 600-pounder, from the weight of its elongated shot.

35. (*President.*) A steel shot for that gun would be an elongated shot?—Probably. We have, at present, no spherical shot for our rifled guns.

36. Judging by your statement that a 9-inch gun has penetrated an 8-inch plate, but that the plate has not been penetrated by a 7-inch gun, and you believe, not by an 8-inch gun, Admiral Robinson's rough mode of calculation would seem to be borne out?—I think it is a good rough rule, if we are speaking of backed structures. I may add, that there was a 13-inch shield in a granite embrasure; it was not struck by anything heavier than a steel shot from a 10-inch gun, but it received nine blows on a very small surface, and the plate was cracked completely through, so that when it was taken down one of the pieces fell out; but it was not actually breached, it appeared to be entire when seen from the outside.

37. (*Colonel Harness.*) It afforded cover to the end?—It afforded entire protection from musketry fire or grape, and would have kept out any light projectiles still.

38. Were the shot used elongated shot?—They were elongated, but round-headed shot.

39. Were they the full weight of the elongated shot?—Not as they make them now. We have made them heavier since. The 10-inch shot in question weighed 280 lbs., for the gun was only a 12-ton gun. They will hereafter weigh 400 lbs., and be fired by a gun of 18 tons.

40. Do you think that the 22-ton gun, with its projectile, is the limit that you are likely to attain in artillery?—I think that, for the defence of land-works, the limit must depend much more upon what naval constructors can manage to carry. If it is true, for example, that Russia is building turret-ships with 15 inches of iron, that is, 11 inches all round, and 4 more in the neighbourhood of the port-hole, I think we must get even larger guns than a gun of 22 tons to beat them off.

41. (*President.*) Are you speaking of the armour of turrets or of ships?—Of turrets.

42. (*Colonel Harness.*) Will not the material itself impose a limit upon you, or will you be able to use larger charges of powder?—I do not think there is any limit imposed by that. No doubt it will be necessary to modify our powder with regard to the quickness of burning, and render it rather less distressing to the guns than it is at present. I am not at all afraid on that score of any difficulty, because we can make guns, and the gun-makers are anxious to make guns, of 30 and 50 tons. I should state that this question has been enormously affected by the development of steel manufacture. Ten years ago it was impossible to get steel of a sound character to make the barrels even of small guns; but now, in conse-

quence of Bessemer's discovery and other things, we can get steel castings of any size we please, at a very moderate cost; there is no difficulty in getting steel castings to make the barrel of a gun of 15 or 20 inches calibre.

43. Has Mr. Whitworth delivered a large steel gun made of steel, manufactured by him?—Mr. Whitworth has delivered two guns of 14½ tons each, which are wholly of steel, but they were only delivered last month, and neither of them has yet been used.

44. (*Major-General Simmons*). Do you know the calibre of those guns?—They are 8·2 inches across the planes, and 9 inches across the angles.

45. (*President.*) Are those the guns that were ordered in 1865 or 1866?—Yes, in December 1865.

46. They have been about three years under construction?—Not quite, but over two years.

47. (*Major-General Dickson.*) Have you seen any of the guns that have been manufactured by Krupp, of Essen, one of which, a steel gun, and very large, was in the Paris Exhibition of last year; and do you know whether any experiments have been tried with it?—That one gun was the only one of the size he has made, and it has never been tried. I saw it; the calibre is 14 inches; the shot are to weigh from 1,000 to 1,200 lbs.; he is now making 11-inch guns and 9-inch guns in considerable numbers. A 9-inch breech-loading gun of his make has very recently been tested with 700 rounds, battering charges, of the same amount as for our 9-inch gun, viz., 43 lbs.

48. (*President.*) That is a steel gun?—Yes.

49. You have alluded to the powder in answer to a question as to the endurance of guns; is not a Committee sitting at this moment upon the question of powder?—There is or has been nearly to the present moment a Committee sitting on gun-cotton. The question of gunpowder was transferred to the Ordnance Select Committee in 1866, and that of gun-cotton has also just been placed in our hands We are dealing with both, and are preparing to make extensive experiments in the course of the current year.

50. (*Major-General Dickson.*) You are endeavouring, I believe, to get powder manufactured of a larger grain, and of a texture that will burn slower?—Yes; we want to get up the maximum pressure less rapidly.

51. (*President.*) And so reduce the initial strain upon the gun?—Yes.

52. (*Colonel Harness.*) Will not the initial velocity be thereby diminished?—I think that may be compensated for by adding to the length of the gun, or to the charge itself. It is necessary that the velocity at the muzzle of the gun should be the same. Generally speaking, with slow-burning powder, it requires a considerably larger quantity to produce the same result. The Russians have made extensive experiments in this direction.

53. (*President.*) Have you carried on any experiments with any cartridges of Mr. Whitworth's?—Not yet; they have not yet been delivered.

54. You have made no experiments to test the advantage of his invention?—None at all. Mr. Whitworth has used hollow cartridges on other occasions, but not in this instance with the gun referred to. The Committee may probably be aware of a serious accident which occurred last summer on the coast of Spain, and which has created great discouragement as to Krupp's steel guns. One of them burst on board a Russian man-of-war in July 1867, killed eleven men, and wounded twenty-nine, off Cadiz. Another steel gun has burst recently in Russia, and there is no doubt that considerable apprehensions are entertained about these large steel guns, the effect of which will be, not, perhaps, to throw them out of use, but to have them used with lower charges.

55. (*Major-General Simmons.*) Are not Krupp's guns made in one steel casting?—No; the body of the gun is cast in one, and then it is strengthened with two tiers of steel rings, which are shrunk on.

56. Similar, in fact, to the Whitworth plan, except that his rings are forced on by hydraulic pressure?—Yes.

57. (*President.*) The core of the gun is cast solid, and then bored?—Yes.

58. (*Major-General Dickson.*) The large gun that I saw was very complicated in its breech arrangements for loading; it could not have been loaded and fired very frequently; the operation would have taken eight or nine minutes?—I believe it would take ten minutes.

59. (*Major-General Simmons.*) You spoke, a short time back, of the protection of granite by iron; do you conceive that using granite as a backing to iron will enable you to reduce considerably the thickness of the iron, as compared with what it would require to be alone, to withstand the blow of a shot?—Yes, certainly, a shot makes way through an iron plate by displacing a small part of the iron in a forward direction, but by breaking, bending, and thrusting aside a much larger proportion. The difficulty of this displacement must be much increased where iron comes in immediate contact with a substance so unyielding as granite. I therefore think that a backing of granite would add materially to the resistance. I think also that mass is very essential to offer resistance to shot; and if that mass is to be obtained by granite, or anything else, I would rather have it than be without it.

60. Have you made any experiments which enable you to form any opinion as to the diminished thickness of iron that would be sufficient to protect the granite, as compared with iron by itself?—There have been scarcely any experiments on that subject. Two shields were prepared four years ago, in connection with the granite fort, exhibiting iron in two combinations, protecting the masonry, but beyond a shot or two they have not yet been tried. The Iron Plate Committee however fired four 68-pounder cast-iron shot at a 4-inch plate supported by blocks of granite.

61. Are those experiments recorded anywhere in any published Reports?—They are recorded in the Report of the Iron Plate Committee, page 179.

62. In what year were the experiments made?—In December, 1863.

63. (*Major-General Simmons.*) You have spoken of the destruction of granite piers by heavy guns. In the experiments made at Shoeburyness, a number of rounds that were fired struck upon a very small surface?—They did.

64. Do you remember within what limit of space they struck?—The area of the granite pier was 185 square feet; it received 22 shots. The exact number of blows per square foot is fully detailed in the report, but the fort was separated into divisions, the east pier, the centre pier, the west pier, and the arches over each pier; every stone was numbered, and the number of blows which fell on the general surface per square foot was reckoned separately, both with regard to the granite and the iron, so that it appeared that the

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worst iron shield, although it only received 22,400 foot tons against 34,300 on the other, was put to a more severe trial, the blows being delivered on a smaller surface.

65. Do you think it possible that a fort attacked by ships could receive the same number of rounds within a very limited area, such as would lead to the destruction of one of those granite piers by crumbling down a portion of it, so that what was above would fall down by its own weight?—No, I do not think it is possible, or rather it is a possibility of so remote a character that every day in a time of war we run the risk of much more serious ones. The conditions of the attack must be taken into account, and when ships are shrouded in their own smoke, and the fort attacked is shrouded in its own smoke, when ships are firing from a floating uneven surface, when the men are excited and perhaps rendered unsteady by casualties occurring round them, to conceive the possibility of a heavy concentrated fire upon a small surface, appears to me to be beyond all experience in warfare.

66. Would not that be especially the case if ships could not approach, say, within 600 or 800 yards of a battery?—Certainly; that increases the improbability of such a thing.

67. It would require, in fact, great accuracy in direction and great accuracy in elevation to accomplish such an object?—Quite so.

68. And the difficulty of obtaining such accuracy from a floating surface is so great as to render the probability very remote that a ship could deliver such a concentrated fire as would destroy a casemate in the way supposed?—That is my opinion. In the case of the particular work represented by the model, the ships attacking it would be in an estuary, where there is no sea and very little current, they would have a comparatively easy time of it, and the conditions would be much more favourable for attack than approaching Spithead or Plymouth Breakwater.

69. You are now alluding to Garrison Point, Sheerness?—Yes.

70. (*President.*) The next question which naturally arises is the question of the shields, do you know what shields are now being constructed at Shoeburyness for the purpose of experiments?—I have seen the plans.

71. Will the experiments when made enable us to judge of the resisting power of the shields better than any experiments that have hitherto been made?—I think so, there is a much greater weight of iron in the shields which are now about to be tested than we have ever had before.

72. (*Major-General Simmons.*) Will the shields now constructing at Shoeburyness, when tested, furnish us with that further information which it is desirable to have as to the additional strength given to the structure by a backing of granite?—No; there are two granite piers supporting the iron structures, but they have not been protected by iron; it could be done, as has been suggested, but they have not hitherto been so protected.

73. (*President.*) Were not some experiments made for testing the resistance of iron plates in front of granite?—Yes experiments of that kind have been made. Some blocks of granite weighing three or four tons were protected in front with 4-inch iron plates which were then fired at. It was found that although the shot did not penetrate the plate, or produce much effect upon its back, the concussion would nevertheless crack the block of granite right through.

74. As regards the effect upon the plate, was it materially strengthened, or would the shot fired have penetrated the plate, if it had not been backed by granite?—Yes, I think that the shot, although only cast-iron, would have carried through a disc of the plate if it had been unbacked. A steel 68-pounder shot is capable of penetrating an unbacked plate of 5·2 inches.

75. (*President.*) If I remember rightly, the Iron Plate Committee, in their first report, stated that the more rigid the support of a plate was, the better the plate itself resisted the attack of heavy shot; do you remember that?—Yes, I think they did so state.

76. Do you entertain the same opinion, or do you think that the interposition of some substance, such as teak, between the iron plate and the granite would weaken the resistance of the plate?—I look upon the resistance of the plate as only a part of the whole resistance; it is the structure as a whole that one is thinking of, and the structure, as a whole, resists better for having a yielding surface, or at least a somewhat elastic surface between it and the plate; the plate, as a whole, would resist better for having an unyielding surface.

77. What should you think would be the effect of Palliser's shells penetrating an iron plate and bursting behind it; would not that increase the destructive effect of a shell very much?—There is always the chance of a wood backing being set on fire; we have seen that occur without the interposition of any bursting charge at all, from the mere heat which has been developed by the concussion, and if the wood is very dry, it breaks up into minute splinters; and there seems to be heat enough to ignite it, particularly if there is a little oakum with it. We have actually had a wooden backing set on fire by the mere heat of concussion, without powder, and if there is any powder to flash into it the chances would be very much increased; there would always be considerable risk of a wooden backing being set on fire.

78. Do you consider that a wooden backing confined as it would be between the iron plate and the granite, and but little exposed to the action of the air, would be easily burnt; supposing the splinters to take fire, do you think it would spread to the remainder of the backing?—Not in such a situation as we are now considering, where it is exposed to the wash of the sea; I think it would smoulder very slowly, and probably go out altogether.

79. (*Major-General Simmons.*) To take the rough rule that was suggested just now of an inch of plate being required to resist every inch of diameter in a shot, are there any experiments which will enable you to say that you might reduce the plate in front of the granite, so as to make it 6 or 4, or any number of inches less in thickness; for example, if you were attacked by 9-inch guns without backing, it would require a 9-inch plate to resist them. If you are to protect the granite, would a 7-inch plate of smaller dimensions be sufficient to resist the same shot?—I think that very much less thickness would be sufficient to afford all the protection that the case admits of; where it was penetrated the bolts would be started, and possibly broken, and the shot would no doubt pulverize the surface immediately upon it; but it could not, I think, to any very material degree, affect the general stability of the structure. At all events I cannot imagine that 14 feet of granite are to go for nothing in the total resistance.

If you want 9 inches of plate without granite you certainly do not want 9 inches with it. I should say that a 6-inch protection would be ample for every such purpose. The great difficulty would be with the bolts.

80. (*Colonel Harness.*) Do you think that the probability of larger guns than the 600-pounder being brought into use, is so great, that we ought to contemplate their being used in the arrangement of maritime defences?—No; I do not. The examples that we have had of very powerful guns have been entirely confined to America, where they have been carried in Monitors, and not in sea-going ships of war. Vessels of that description are not well adapted for the attack of foreign shores. They are admirably adapted for home defence, but they are so slow in their fire, so clumsy and difficult to manage altogether, and the ship is so entirely at the mercy of many serious accidents, which might occur, such as breakage of machinery, failure of ventilation, and so forth, that I do not think they will be relied on. As I stated before another Committee, I think practically that we shall not go beyond guns of 18 or 20 tons. Different powers may have a few larger guns to boast of, for the mere effect of prestige, but they will not be extensively brought into any operations.

81. I believe they have not yet put the 22-ton gun on board ship?—The gun of the "Miantonomoh" was a 19 or 20-ton gun.

82. (*President.*) Have they had one of the 20-inch smooth bore guns afloat?—I believe not; one of them was, however, intended for a Monitor, "The Puritan."

83. (*Major-General Dickson.*) You think that for the purpose of resisting an attack from the sea, a gun of 18 tons would be about the limit generally?—That is my own opinion.

84. (*Major-General Simmons.*) What do you consider is the requisite protection to give in the parapets of forts to resist such artillery as would be brought against them at the present day?—I think that 25 feet of earth are not the least too much to get security against a rifled shot—in fact, instances have occurred of their going through even that; but it is very rare. It is not only a question of direct penetration, but you want an immense mass of earth to resist the explosive power of shells, for each shell is a small mine in itself, and it blows such a quantity of earth away that you want a great deal of it.

85. Is your opinion based on the experiments which were made at Newhaven?—Yes; it is based very much upon those experiments; but we have seen the effect of the penetration of shot into the proof butt at Woolwich, in proving guns. A 600-pound shot passed nearly through the butt, I forget exactly the thickness of it, but I think it was 60 feet; it was, of course, an unusual case. The gun was very close, and the charge a large one. Still it gave a good idea of what little resistance earth opposed.

86. You fire now double shells. I believe that is the term used?—Yes.

87. With very much larger bursting charges than were used a few years ago?—Yes, very much larger bursting charges; but double shells are not universal. The 7-inch gun is the largest gun that has a double shell. The 64-pounder has a double shell.

88. (*Major-General Dickson.*) What is the weight of it?—It weighs 147 lbs. for the 7-inch gun, and contains nearly 13 lbs. of powder.

89. (*Major-General Simmons.*) Are these guns that would be used in the attack of earthworks?—It is the 7-inch breech-loader that is used by us for that service, for which such shells have not been provided. No foreign powers have these shells at all, and we have not introduced them for breech-loaders, only for muzzle-loaders.

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90. Considering the great advantage that would be gained in an attack from the use of these very large bursting charges, do you think it probable that they would be adopted?—I think so. The mountain guns now in Abyssinia carry double shells—the ordinary shell is a 7-lb. shell, but the double shell weighs 13 lbs., and holds 1 lb. of powder, or more than twice the charge of the other. Whether they have been used I have not yet heard.

91. Do you think that a thickness of 25 feet for the parapet would be sufficient to resist those double shells, or afford sufficient cover, supposing that double shells were used in an attack?—Yes, I think so; because in consequence of the increased weight of the shell, it is obliged to be fired with smaller charges, and consequently has less direct penetration.

92. Would that make it necessary for the merlons to be made longer, or the intervals between the guns to be made greater, as there would be a greater probability of a large shell disabling two guns if it lodged in the centre of the merlon?—Yes; I think it would. I think that the large increase which has taken place in the power of artillery, points to the necessity of separating the guns more widely than has been done hitherto. There has been both an increase in the size of the guns and carriages, and in the quantity of stores required, conditions that would make the effect of shells bursting among them more mischievous.

93. In former times shells were very little used, horizontally, with large charges. Do you think that the introduction of rifled artillery, with shells, which I presume will form the principal part of the projectiles fired in an attack, necessitate a a very great increase in the number of traverses and arrangements for the protection of the gunners?—Entirely so. I think there should be traverses between every two guns; it is of great importance, in fact, to increase the number of the traverses, and, if possible, to provide parados, to get a greater amount of protection from the effect of shells, and to confine their destructive effects within as narrow limits as possible when they do burst.

94. Would it be, in your opinion, advisable, in a work like that of which there is a model before us, to carry out the same principle, by dividing the guns as much as possible, so that the effect of a shell bursting should not be to disable several guns instead of only one?—Yes; the idea of having splinter screens between the guns on board a ship was discussed some time ago. I think it was brought forward by Admiral Key, and I am quite of opinion that it would be an advantage in casemates, where it can be done, to have them. Among other reasons, you would diminish the demoralising effects of casualties, and the men would be able to fight their own gun without being aware of what was going on around them. The screens should be of such a nature as not to add to the effect of splinters by reflecting them. Rope curtains would, I think, be best.

95. (*Colonel Harness.*) If a screen were interposed, need it be very thick?—No; a rope curtain of 6 inches would be enough.

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96. What quantity of powder would there be in a double shell for a large gun that would be used in land operations, say a 6½-ton gun?—It is not a 6½-ton gun, it is only a 3½-ton gun, that is to say, it weighs 72 cwt.

97. Then take the 7-inch gun?—The weight of powder is 13 lbs.; the weight of the shell empty is 147 lbs., or about 50 per cent. greater than that of the common shells, and that requires a corresponding reduction of the charge; it makes the fire more curved, and the penetrating power less.

98. (*Major-General Simmons.*) Can you give the dimensions of the crater that has been produced in the earth by any of these shells?—No; I cannot give you the actual dimensions.

99. (*Major-General Dickson.*) Supposing guns like the 7-inch gun to be placed in a work for the defence of the coast, what space would you recommend to be given between the guns?—If possible, as much as 30 feet.

100. (*President.*) You have alluded to the destructive effects of these double shells. Would the penetration of them into earthwork be as great as the penetration of a single shell?—No; it would not; and they would be more likely to break on striking; they are necessarily weaker, but, in point of fact, we have never fired any of them into earthwork; therefore we do not know what they would do. We are labouring under considerable disadvantage in respect to many of these questions, from having no place within the United Kingdom where we can fire live shells into earth; we cannot do it at Shoeburyness, and we cannot persuade the Government to go to any great expense in buying ground elsewhere. We have been for the last four years looking out for some place where we can determine these points by actual experiment.

101. (*Major-General Simmons.*) Does not the use of shells for horizontal fire render it very desirable that the defences for rivers and other batteries should be constructed in such a manner that they would not be readily breached by such shells when they come over the parapets and fail to strike them?—Certainly; the ordinary gorge walls would be ruined by a front fire in a very short time.

102. And especially so if the fire was from batteries at long ranges?—Yes.

103. Therefore those gorge walls, in your opinion, should be thicker or protected by earth?—They should be thicker or protected by earth, where the line of the wall would be exposed to any probability of shells coming in that direction: it is not always the case. I should like to call the attention of the Committee to one little matter in practical artillery, about which I entertain an opinion, that I am desirous of expressing, it is with reference to the proximity of heavy guns in a vertical plane. We have ascertained that the effect of the discharge of a 12-inch gun upon the men serving another gun, as much as 30 feet distant, if they are caught in the act of loading, behind a shield of the usual thickness, that is to say, where they are nearly as far advanced as the gun fired, is somewhat greater than they can be prudently subjected to, and particularly if the gun is turned towards them. A blast and a shock are caused, which are very uncomfortable. I have put myself in the position in order to ascertain what it is, and I think it would be almost enough, if the men were much exposed, as they are, to knock them down, or blow the cartridge out of their hands. And if that is the case in a horizontal plane, it is likely to be more serious in a vertical plane, where the distance, instead of being 30 feet from muzzle to muzzle, is only 15 feet. I think it would be impossible to get the men to load this gun (pointing to the model), while this gun above it (pointing to the same) was being fired. I believe it could be guarded against by some contrivance; but this is a point that has not received attention.

104. (*Colonel Harness.*) Of course the effect produced depends upon the power of the two guns which are placed near to one another?—Yes.

105. With respect to what sized gun would you consider it necessary to attend to that point?—For not much less than an 18-ton gun, or for no charge less than 50 or 60 lbs. of powder. We have tried it with 70 lbs. of powder. I got a couple of men to stand in the position one day, and the shock caused them to feel considerably confused, although they were tough old soldiers.

106. You would not arrange guns beyond 18 tons in two tiers without some special protection?—I would not have any gun without some protection for the purpose of throwing off the blast.

107. Would the same effect also be produced below the gun that was fired?—Yes.

108. (*Major-General Dickson.*) Do you think the same effect would be produced upon the lower gun when the upper gun was fired?—Not so much, particularly if the upper gun were *en barbette*, and a parapet intervened instead of a shield. In fact, in this case neither would have much effect on the other.

109. (*President.*) Is there any other point to which you would wish to draw our attention?—I think not.

(The witness withdrew.)

Adjourned till to-morrow at 1 *o'clock.*

Friday, 1st May, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., *President.*

Major-General DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
JOHN HAWKSHAW, Esq., C.E.

Lieutenant J. C. ARDAGH, R.E., *Secretary.*

Rear-Admiral A. COOPER KEY, C.B., examined.

Rear-Adm. A. Cooper Key, C.B.

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110. (*President.*) You are Director of Naval Ordnance?—Yes.

111. Before that you held the appointment of Captain of the "Excellent," I believe?—Yes; I commanded her for three years.

112. You have therefore had an opportunity of witnessing most of the important experiments that have been made to ascertain the power of guns, and the resisting power of the material which has been opposed to them?—During the last five years, I have witnessed most of the important experiments; all those at Portsmouth, which have been carried on with guns not heavier than the 7-inch gun; and most of the important experiments at Shoeburyness.

113. Can you state, for the information of the Committee, what you consider to be now the power which an attacking squadron could develop against a fort such as the Spithead Forts, or will you first trace the advance that has been made in guns?—The gun that we look to as the principal arm of our ships at the present day is the 9-inch gun of 12½ tons, and although I have no doubt that heavier guns, of 18 and 25 tons, will be able to be worked on board ship in comparatively fine weather, either on a broadside or in turrets, if it is required to use them, yet I should doubt their superiority over the 12-ton guns for the general purposes of the service; they must be worked very slowly, and the increased power that will be obtained from them will not, in my opinion, be sufficient to compensate for the rapid working of the 12½-ton gun, compared with the power of that gun. I do not therefore contemplate that our ships will carry a heavier gun for their general armament than the 12½-ton gun, except in exceptional cases. A foreign country, preparing for the attack of our ships would do wisely to prepare for the attack of that gun.

114. Do you consider that we ought to prepare our forts that are exposed to an attack by sea to resist heavier guns than that?—I do not think it is advisable, looking at the enormous expense (which must always be an important consideration), to prepare generally for attack by guns more powerful than our 12½-ton gun; a structure that would effectually resist that gun would resist a single shot of far greater calibre.

115. Can you lay before the Committee any statement of the comparative powers of the guns; what do you consider to be the comparative power of the best French gun that you know of, as compared with our 22-ton gun?—The French gun, weighing 21 tons, at 500 yards, which is a good range for comparison, has more racking power than our 12½-ton gun, but has less penetrating power at that distance. The racking power is measured by the total energy, the *vis viva*, or the work in the shot; the penetrating power is the total work expressed in foot-tons, divided by the number of inches in the circumference of the shot.

116. Can you state the difference between the two in figures?—The total energy in the French gun of 21½ tons, at 500 yards range, is 3,040 foot tons; that of the English 12½-ton gun, at 500 yards, is 2,720 foot tons, that represents the racking power. The energy, per inch, of shot circumference at that distance, in the French gun is 90 foot tons, and in the English 12½-ton gun 97½ foot tons.

117. Showing a considerable advantage in the English gun?—Yes, in penetrating power: that is, comparing the French 21-ton gun with our 12½-ton gun. The great difference is no doubt due to the weakness of the French powder.

118. (*Major-General Simmons.*) What is the calibre of their 21-ton gun?—10·63 inches.

119. (*President.*) If you compare it with the English 10-inch gun, the 18-ton gun, what would be the difference?—Compared with our 10-inch gun, the difference would be very great indeed in favour of the English gun, both in penetrating and racking power.

120. With regard to the American gun, at 500 yards, taking it at the same distance, which is giving as much advantage to the American gun as you can, how would it compare?—As the range increases, so the smooth-bore Rodman gun loses power very rapidly; but the highest charge that they are allowed to use in the United States Navy is 60 lbs. of American powder, and with that charge the total energy or racking power of the gun, the 19-ton gun, is 3,665 foot tons. Its racking power is therefore very considerable, but its penetrating power at that distance is only represented by 77 foot tons. Owing to its large diameter, its penetrating power is very much less.

121. And those probably represent the heaviest guns that we might calculate upon being carried by any hostile ships approaching our shores?—Certainly; I should mention that at present neither the American gun nor the French gun that I have spoken of, is either put on board, nor is it contemplated that they will be put on board, seagoing ships. The Americans have the 15-inch gun on board their Monitors, and the French have lately put their 21-ton gun on board the "Rochambeau," which they purchased from the Americans. They are armed solely now for harbour defence, but of course those ships could be used for the attack of forts.

122. That ship could be brought from Cherbourg to Portsmouth?—Yes, no doubt.

123. (*Colonel Harness.*) What is the penetrating power of our 22-ton gun?—I have not got that recorded. The fact is that the weight of the projectile is not decided upon: nor indeed is the calibre quite settled.

124. Is it quite safe to give up the idea of carrying guns equivalent to our 22-ton gun, on board ship?—I think it is probable that guns of that weight will be carried in exceptional cases.

125. If the works at Cherbourg were made to

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resist our 12-ton gun, and we were fitting out an expedition against it, we should certainly put 22-ton guns into our gunboats?—Cherbourg, I think, is hardly a case in point. I believe that we might destroy the Dockyard and ships there at any time, if we had command at sea, without bringing our ships near enough to the forts to endanger them; but there are many places, like Cronstadt for instance, where we should no doubt be compelled to use the very heaviest guns that you could put on board ship, for a special attack.

126. (*President.*) We may assume, I suppose, that foreign powers will take the same course as to ourselves. If they wished to destroy the forts at Spithead they would use heavier guns?—Yes.

127. (*Colonel Harness.*) Would it be safe to assume that no gun of greater power than our 25-ton gun, within a reasonable period, will be put on board ship in an exceptional case?—I do not think it is probable that we shall see heavier guns than the 25-ton gun put on board ships in our lifetime, excepting for experiment, or for some especial purpose. I cannot contemplate the idea of any ships coming over to make a decided attack on our Spithead forts. I do not think it is within the bounds of probability that ships would come over to have an actual fight with those forts, if they are built in the way that we may reasonably expect them to be built when they are completed.

128. But their powers of defence will depend upon their powers of resistance to the most powerful artillery that may be brought against them by ships?—Yes; but the terms, "powers of resistance" are in themselves rather vague terms. The actual circumstances of the attack require specifying. There are three cases: the first would be that of ships running past a fort, and injuring the fort in passing as much as they could. The second case would be that of ships coming to make a *bonâ fide* attack upon a fort, which would be a far more serious thing for the fort than in the former case. The third case would be a regular siege of the fort from the shore, for which purpose guns would be brought to make a breach, when they would put every shot one after another near the same spot, and that of course would be a far more serious case than either of the other two. The question of range at which these attacks can be made is also to be considered with respect to each fort as it is built.

126. If we had to construct a fort to guard an entrance which could be attacked from the sea, must we not first of all take care that the guns in that fort, whatever their calibre might be, should be secure from the guns that might be brought against it?—Yes, to a reasonable extent; it would be necessary to consider what any expedition purposely fitted out to come against you could carry, in order to ensure the maintenance of your fire.

130. If they could not destroy your guns they would probably run past, but if they could destroy your guns they would do it before they ran past?—Yes, they would if they could, but destroying guns would be a very difficult operation from ships under any circumstances when those guns are well served, because the question is would you make your defences strong enough to resist one, two, three, or four shot within a very small area: it is simply a question of inches of iron, and therefore of pounds, shillings, and pence. I think undoubtedly that the defences should be made of such a substance as to be able to resist any one shot from any one gun that could be brought against it. If you go beyond that it opens a question, and a very wide one. If I were called upon to give a distinct answer in words and figures to that question, I should say that the fort ought to be able to resist one round in any spot, of the most effective projectile from a 25-ton gun. This is a more definite answer than that I gave to Question 114.

131. (*President.*) Assuming that an attack was made with a 25-ton gun, what should you consider to be the amount of protection or defence required to meet such an attack, taking into account the number of shots that could be delivered within a small area from guns of the calibre mentioned, by the attacking force. Suppose, for example, that a fort was liable to be attacked by French vessels carrying 25-ton guns, have you considered what thickness of iron would be necessary for the protection of guns in shields like the model before us?—Taking the fort at the end of Garrison Point at Sheerness as an instance, and I assume that you refer solely to very important positions, I can only give an opinion from the course of experiments that one has witnessed. I consider in the first place that any resisting structure should be composed of wood backing, as well as iron plated.

132. Do you consider that wood backing is indispensable?—I do. In looking carefully through all the experiments which have taken place, I do think that wood backing is indispensable, not only because it enables the fastenings to be made more securely, and gives more elasticity, but it prevents the splinters from coming into the interior of the fort or ship, as the case may be, to a considerable extent, and it also increases the difficulty of penetration. I am also of opinion that it assists the outside plate in resisting the effect of shot.

133. If I remember rightly, the Iron Plate Committee stated that the more rigid the backing the greater was the resistance offered by the plate itself?—They recommended a wood backing. I am now only stating my belief that wood backing helps a plate to resist the penetration of shot. I believe it is the general opinion that a 7-inch plate, as regards the plate itself, will be penetrated by shot as readily, whether it be backed or unbacked: in the former case it leaves the backing to be penetrated afterwards. It is not generally supposed that the backing gives a support to the plate itself, but in the experiments made against a good 7-inch plate, well backed, in the "Thunderer," last year, from a 7-inch gun with chilled shot at 10 yards distance, two rounds were fired with a battering charge of 22 lbs. of powder, one only just penetrated through the 7-inch plate ¾ of an inch, the other did not get the point through, whereas at Shoeburyness a good 7-inch plate unbacked is penetrated by 15 lbs. of powder with the same gun at 70 yards.

134. (*Major-General Simmons.*) Do you know whether those plates were made by the same manufacturer?—They were made by Brown and Co., and they were backed with 40 inches of teak.

135. We have now had a comparison made between an unbacked plate and a plate backed with wood. What is your opinion as to a plate resting upon granite, as compared with a plate resting on wood?—I have not seen any experiments made with a plate resting on granite, but I think that it would be about the worst sort of backing that you could give to a plate.

136. I am talking of the resistance offered by

the plate itself, and whether it will resist more by having a perfectly rigid backing, such as granite or cast-iron, than it would with a wood backing; not of the effect upon the structure behind it?—I do not think that anyone's opinion upon that point is worth having, unless they have seen the experiments tried. My own opinion would be against putting a plate on such a rigid backing as granite, not only as to the effect it would have on the granite, but I cannot help thinking that it would have the effect of assisting the starring and breaking-up of the plate.

137. Do you consider that if plates were put in front of the granite, it would be necessary to interpose wood or some elastic backing between the plate and the granite?—I think it would be a very great advantage. I wish to add to what I said before, that I think the outer plate should be decidedly 8 or 9 inches thick.

138. Would you have it composed of more than one plate?—The remainder of the necessary thickness that was required might be made up by a second plate and a skin inside the backing of wood; I do not hold the opinion as to the very inferior resisting power of two or three plates compared with one solid plate. I think they would be inferior—as inferior as you might say a bad plate would be to a good one; the resisting power of the former has been calculated at the sum of the resistances of the plates only, while that of the latter increases as the square of the thickness. I do not think that there is nearly so great a difference as that.

139. Have you witnessed any experiments against granite entirely unprotected?—None with heavy guns. I witnessed some experiments at Portland from a 68-pounder some few years ago, comparing different descriptions of granite; but I have not witnessed any with heavier guns than that.

140. (*President.*) I believe there are at the present time some shields being prepared at Shoeburyness which will probably enable the Committee to judge better of the resistance offered by the different modes of constructing shields, than by anything we can at present refer to?—I have not the slightest doubt that the experiments which are coming on will give you much valuable information.

141. (*Major-General Simmons.*) You spoke just now of a French 21-ton gun having an energy of 3,040 foot tons at 500 yards when fired with French powder?—Yes.

142. Do you conceive that that gun is sufficiently strong to stand the strain of the same projectile if it were fired with English powder, or could the French, by improving and increasing the power of their powder, bring that gun up nearly or quite to one of our 21-ton guns?—I certainly do not think that the present guns would stand it; the French officers themselves do not consider that their present guns would stand our English powder; they have tried it, and they find that their guns will not stand our powder; we have had distinct information on that point.

143. (*President.*) The charge appears to be 66 lbs. of French powder?—Yes; and that only gives a velocity of 1,000 feet; that is not only the result that we arrived at by experiment, but it is the account that we receive from the French officers themselves of their own experiments. The Committee are probably aware that their guns are made of cast-iron.

144. It was pointed out to the Committee yesterday that if two guns were placed the one over the other, as in the model before us, and the upper one was fired, the concussion caused by the discharge would probably seriously affect the men who were loading the other. Supposing that the men at the upper gun were loading it at the time the lower one was fired, would there not be very serious risk of danger from the concussion?—That would depend upon the height between the ports.

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145. It is 12 feet?—Then there is no doubt that if the loaders had their heads projecting beyond the ports they would receive a very serious shock from the concussion; but I should say that that is a danger which might easily be obviated by having a projection over each port, something that would project beyond the muzzle of the gun. Anything intervening between a man's ear and the muzzle of the gun reduces the shock to a great extent. I have tried it frequently with a 12-ton gun. A ledge projecting something like a port would relieve that.

146. You see no difficulty in obviating that?—None; but with regard to that particular fort I should be much inclined to make a certain difference in the resisting powers of the material in the neighbourhood of the gun and the other part of the iron structure. Our object, I think, is to protect the guns and the gun-carriages from being damaged, and the lower part of the ports and all that part that will protect the gun-carriage should be of thicker iron than the central part. The mere fact of a shot coming in where there are no men and no guns does no great harm to a fort, although it would to a ship.

147. (*Major-General Simmons.*) Looking to the possibility of shells penetrating these shields, is it advisable that the guns should be separated by traverses, so that the effect of the explosion of a shell might not tell upon the whole battery, but be limited to the detachment at the particular gun into whose compartment it had fallen?—I have always thought that traverses between guns, where shells might burst, would be very valuable; it would certainly be advisable to have them if you could do it without inconvenience. I should doubt the great effect of a shell passing through the very heavy armour-plating that would be put outside a fort unless it entered at a very weak place, or where it had been before very much damaged. But whether that is the case or not, I think traverses would be a very good thing.

148. Might not a shell enter through a port?—Yes; but it would not burst unless it struck the gun, and even if it struck the gun, I doubt whether it would burst, for they do not use fuzes with those shells. I think it would glance off.

149. (*Colonel Harness.*) If it entered, it would probably strike the opposite side, and burst there?—Then there would be nobody over there. However, I certainly think that traverses should be placed between the guns.

150. (*President.*) Has there been anything in the shape of a traverse introduced on board ship?—In the "Bellerophon" they have a screen extending for about 2 or 3 feet from the ship's side between every two guns, one purpose which it was intended to effect by that arrangement was, besides strengthening the ship, to act as a traverse. I do not think that it extends far enough from the ship's side to be of any use, and I doubt whether it could be adopted on board a ship from the great inconvenience of working the guns, and

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getting up the projectiles between the guns, because the guns are so close together.

151. What distance do you conceive such heavy guns as the 9-inch guns should be from one another in a battery, to give ample room for working?—I have gone into that question very carefully as regards a ship, and I do not think that 12-inch guns should ever be put closer than 20 feet apart from centre to centre of the ports, not only to give proper room for training the guns, but in order to work the projectiles which are brought up between the guns. That being the case on board a ship, I should say that 20 feet is the least distance that should be adopted in a battery; every additional foot that you give in a battery limits the number of guns you can put in the work. You have more space in a battery than we have on board ship, but I think that 20 feet is the least space that there should be between the guns, or rather between the traverses.

152. (*Colonel Harness.*) You would say that in our casemates the space ought to be 20 feet wide?—Yes.

153. As far as you can judge, do you consider the 20 feet between the traverses would afford sufficient space for working the guns?—Yes.

154. (*Major-General Dickson.*) When ships are attacking a fort, do you think that the accuracy of their fire is sufficient, as a general rule, to strike a plate in a work upon the same spot or within a few feet in many rounds?—Under ordinary circumstances, certainly not; they could not depend upon striking the same spot within 5 or 6 feet at anything beyond, or even at 200 or 300 yards distance.

155. Even supposing the most favourable conditions of smooth water?—Even supposing that. I am supposing that a ship is under weigh, and that the enemy is firing at you, that there is therefore much smoke, and all those circumstances that change a common experiment into a matter of real action.

156. Therefore, the probability of a fort being hammered severely on one spot is infinitely less than in the case of a land attack?—Considerably less. It would be just a question of whether there would be a chance of two or three shots hitting very nearly the same spot.

157. (*President.*) It does not follow that a fort would ever be exposed to so severe a trial as those casemates have been exposed to at Shoeburyness?—I should say certainly not.

158. (*Major-General Simmons.*) Therefore a ship probably could not breach a granite wall 14 or 15 feet in thickness, or it would not be attempted?—Certainly not. I do not think it is in the slightest degree probable that any ships will make such an attack on a fort as would involve making a breach; I mean actually breaching a fort by firing shot one after the other, on the same spot, as would be done in a land siege.

159. The sea forts at Portsmouth are stated to be so designed for a height of 16 feet above high-water mark, that there is to be merely a granite wall of 14 feet 6 inches in thickness. Do you think it will be necessary, contemplating an attack from the sea, that the 14 feet 6 inches should be supplemented by iron plating in front of it?—Of what size are the granite blocks?

160. About 4 feet, and in some places 5 feet in depth?—Looking at the great importance of the superstructure, and the great importance of the fort, I would say that, although no ships would ever contemplate breaching that granite portion of the fort, yet it seems to be probable that broadsides of heavy guns fired at that portion of the fort might seriously shake the superstructure, and so I should be inclined to supplement it with iron plates outside. I should add that this opinion rests entirely upon whether the superstructure is dependent for its stability on its granite foundation or basement wall.

161. Do you think that 14½ feet of masonry, such as has been described, are sufficient to protect the magazines in rear of it against an attack by sea, without the assistance of iron?—If it is good and substantial masonry, I should say that it would be.

162. Have you any knowledge of the strength of the materials necessary to resist the vertical fire of shells?—I have tried various experiments myself as regards the accuracy of vertical fire from a 13-inch mortar, at 700 and 1,000 yards, and I have found that at the former distance—I am speaking from memory—upwards of 50 per cent. of the shell from the 13-inch mortar would have hit a ship that was stationary at 700 yards, and under 30 per cent., at 1,000 yards, would have struck a ship of the size of the "Warrior," if stationary. I have known of no experiments being made as to the resisting power of iron casemates or other structures against vertical fire, but I think it is of great importance that some experiments should be made to ascertain what thickness of iron would break up a shell, and also what would be the best material of which to make our mortar-shells that were intended to be used for vertical fire against either forts or ships.—See Ordnance Select Committee Reports, Vol. II, page 201.

163. In the practice you have spoken of, was the range accurately measured or estimated?—It was very accurately marked out with stakes, 10 yards apart, both in the line of fire and across the line of fire, the range was very accurately measured, and not only the range but the position of each shot was laid down within two yards, cross-bearings being taken with those stakes 10 yards apart.

164. (*Major-General Dickson.*) In attacking a fort from the sea the mortar fire is not so accurate as it is from the land, is it?—Certainly not, but the practice I was referring to was from a mortar boat, which had a slight motion. The mortar was fired by skilled and trained men, and a slight motion was allowed for; it was nothing more than must always take place with so small a boat armed with so heavy a gun. The motion of the men in loading and firing the mortar caused, of course, a little rolling motion, but it was certainly the most wonderful practice I ever saw.

165. Was the space representing the "Warrior" broadside on to the mortar battery or lengthways on to it?—I took it both ways: that is to say, after plotting down the position of the shot I placed the plan of the ship first 'broadside on,' and then 'end on'; when 'end-on' more shell would have hit her than when 'broadside on,' there is a very material difference; it is far better to put your ship broadside on than to put her end-on when engaging a fort at long range.

(The witness withdrew.)

(*Adjourned sine die.*)

Thursday, 7th May, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel W. F. D. JERVOIS, C.B. (Deputy Director of Fortifications), examined.

Col. W. F. D. Jervois, C.B., R.E.

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166. (*President.*) The Committee are desirous of hearing from you an explanation of the manner in which it is proposed to work the guns in the new forts?—It would probably be desirable that I should, before explaining the precise plan that is now adopted for working great guns in the new forts, state shortly the history of the regulations which bear upon the subject.

167. Do you refer to regulations from the War Department, or to what regulations do you allude?—I will explain as I go on. The first document I know of, that was issued on the subject, is dated 28th January, 1853, and is signed by General Cator, then Director-General of Artillery; in it certain arrangements with regard to shell-filling rooms and expense magazines are laid down. This document was the law on these matters until the 1st January, 1861, when a Report of a Committee of Artillery and Engineer Officers, consisting of four Artillery and three Engineer Officers, was issued. These Officers were appointed by the Commander-in-Chief, the Artillery Officers being selected by the Deputy Adjutant-General of Artillery. They revised the Circular of 1853, and made certain proposals, which were issued by the Commander-in-Chief, with regard to expense, magazines, and shell-filling rooms, and other matters relating to batteries.

168. They were issued as instructions for the guidance of officers generally?—Yes. The Committee made a plan, section, and elevation which were attached to the Report, and which fixed in detail the arrangement of the expense magazines and shell-filling rooms. This plan appears to have been very carefully considered, and it was adopted in several works. There was afterwards a change of the Artillery Staff at the Horse Guards. General Taylor succeeded General Bloomfield, and Colonel Gambier succeeded Colonel Bingham; and this plan, which had been issued with the high authority that I have just now referred to, was objected to by those officers, and we had to reconsider the question. Then during the course of this re-consideration, guns were getting larger, and the charges of powder were consequently getting larger too. The charge of the 9-inch gun is about half a barrel, so that the plan which in part had been previously adopted, of taking a barrel from the magazine to the shell-filling room, opening it, and making the cartridge, was no longer applicable; so it was determined that each charge for these large guns should be, by itself, in a barrel, or a zinc cylinder.

169. Each cartridge?—Yes. The principle which had been before usually adopted, of having a main magazine containing the main store of powder, and expense magazines, in which alone there should be charges made up, was altered; and it was determined to have the whole of the ammunition made up in cylinders, and the whole of the shells filled and stored ready for use, excepting their fuses: so that the plan adopted under the new arrangement was, to take the charge ready made from the magazine, and get it as quickly to the gun as possible.

170. The distinction between the expense magazine and general magazine was done away with?—It was not altogether done away with; in some cases it was done away with, in others not, according to circumstances; but whether there was an expense magazine or a general one, it was proposed to have all the ammunition made up. Then the question had to be considered for both casemate batteries and open batteries. For casemate batteries, the plan generally adopted has been to have the magazines in the basement story under the gun casemates. In some cases, where there is no such basement, as at Hurst Castle, we have adopted the plan which is generally applied to open batteries. This (producing the same) is a plan of the magazine arrangements for casemate batteries. You will observe that nearly the whole basement story (pointing to the plan) is occupied with magazines for powder and shell alternately. Over each of the divisions of the basement is a gun casemate. Each powder-magazine and each shell-magazine supplies four guns, *i.e.*, two guns above it on either side.

171. (*Major-General Simmons.*) If I understand you rightly, this late arrangement has entirely got rid of the necessity of a shell-filling room at any rate?—Excepting that you want a room for manipulating, to see whether the charges are dry, and to examine the store of shells. The new arrangement did away with the necessity for filling-rooms, so far as the immediate supply of ammunition to the battery was concerned.

172. (*President.*) There is a shell-filling room still marked upon this plan?—That is for the purpose of examining the charges or the shells; it is an examining room. This model shows the mode in which the powder and shells are stored, as applied to a casemated fort.

173. Are there separate places for the shot and the shell?—No; but shot may be stored in the same manner; I only contemplate shells, however, in these places. A shell is now a shot, though a shot is not a shell.

174. (*Major-General Simmons.*) I suppose you consider the larger proportion of projectiles to be fired will be shells?—Yes, certainly.

175. (*President.*) We are dealing now with powder and shells?—Yes; here is the powder, and there are the shells (pointing to the model).

176. (*Major-General Dickson.*) Are the fuses kept with the cartridges, or in the magazine with the shells?—They may be kept in the magazine with the shells.

177. (*President.*) Where are the fuses put into the shells?—They would be put in in rear, under the gun, after the shells are brought up the lift.

178. Are the fuses put into the shells in the

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battery?—Yes. You will observe, as I before remarked, that the range of magazines in the basement is allotted for shell and powder alternately. Then on one side, between the range of magazines and the outer wall of the fort (pointing to the model), there is a passage into which the charges of powder are taken, through openings, from the powder magazines, and are put into lifts communicating immediately with the guns. The charge of powder then comes to this point (pointing to the model), and is taken out here (explaining).

179. (*Major-General Simmons.*) In the front part of the battery near the muzzle of the gun?—Not exactly so, but here, under cover of the front pier (pointing to the model). Then on the other side of the range of magazines, and to the rear, is another passage, into which doors open from the shell-magazines and where the shells are sent on trucks specially made for the purpose, by other lifts, directly to the gun-casemates. The shell comes out here, in a recess in the rear pier (pointing to the model). There is one special truck to take the shell out of the magazine to the lift, and another kind of special truck to take it to the gun when it gets up to the level of the battery (explaining the model further to the Committee). The first is something like a porter's truck. The latter is on four wheels, and may be drawn along with perfect facility.

180. (*President.*) The shell is put on one of those hand-barrows and wheeled to the gun?—Yes. The first operation is in the shell-magazine, where the shells are placed on the floor. There you put them on one of the basement trucks. The shells are standing upright; it is a very simple operation; you get the truck under the shell, and wheel it up in that way (describing), and then to the lift with great facility; then it is in a position to go into the shell cage (explaining on the model), and up it goes to the lift. The cage (explaining) when it is hooked, must close, and it keeps the shell in its place.

181. It is transferred from one place to the other?—Yes; it is wheeled by the basement truck into the apparatus in which it is carried up the lifts (explaining).

182. When it gets to the level of the gun, what is done?—Then there is a truck more like this (describing), differing from the basement truck, and one that you can hook on to and run about with great ease.

183. There is a special truck?—Yes.

184. Now we have got the shell run along to the gun?—Yes; it is then placed on a bearer or receptacle specially formed for the purpose, and is lifted up to the mouth of the gun. You want nothing more than hand-power to lift a 9-inch shot or shell up to the mouth of the gun.

185. With a 250-lb. shot?—Yes; I believe the opinion of some Artillery officers is that you may also lift the shot of the 18-ton gun, *i.e.*, a 450-lb. shot, by hand-power.

186. (*Colonel Harness.*) How many men have you at the barrow?—Four for a 9-inch gun. This (pointing to model) is the proposed arrangement for lifting the shot or shell of an 18-ton gun. There is a radial traveller that runs to whatever position the gun happens to be in (explaining). The shot hangs on here (pointing to the model); it is put on the bearer and hoisted to the mouth of the gun, and in it goes.

187. (*President.*) Is there a tackle to that?—Yes.

188. This brings us to the gun being loaded?—Yes. Before leaving the model I should observe that there is a separate passage here (pointing to the model), which is used entirely as a lighting passage. The magazines are quite dark, and you must have artificial light. This arrangement (pointing to the model) enables you to have the lamps perfectly separate, either from the powder or the shell passage I have before spoken of, and the lamps are passed in over a door here (explaining), in a small closed passage, as you see in the section of the model. The details of the lamps have been considered very carefully in connection with Mr. Chappuis. We have special lamps which are found very well adapted for the purpose.

189. Is there any other point connected with the magazine arrangements which you wish to allude to?—I do not think there is anything else.

190. (*Major-General Simmons.*) What number of rounds do you provide for each gun?—100 cartridges and 100 shell.

191. In all the sea forts?—Yes.

192. (*Colonel Elwyn.*) Has that been laid down by a recent order. The order that you referred to gives 200?—Yes; I am now referring to charges for heavy guns—100 rounds per gun. If more are required, you must get them from a reserve magazine outside the work; or inside, if the work is large enough, and supposing it is desired.

193. Is that all the magazine accommodation that you provide;—100 rounds per gun?—Yes.

194. Have you no reserve magazine?—In the cases I am just now referring to there is only one set of magazines for powder, and one set of magazines for shell.

195. Are there no reserve store magazines?—No; the powder and shell go straight from the magazine to the gun. The storekeeper's reserve magazines are at a central part or parts of the fortress.

196. (*Major-General Simmons.*) Is this magazine arrangement, of which we have seen a model, only calculated to contain 100 rounds, if it is quite full?—You could put more in it if you wanted to do so. It is, however, desirable to have plenty of passage room to use the trucks in, and plenty of room for the men to move about.

197. As you take the ammunition out you make your space?—Yes; there is one thing that I have not yet stated, and that is as regards the shells which are piled in several tiers. There are two girders which run from here to here (explaining on the model), and there is a traveller which runs along the girders. This traveller moves either backwards and forwards, or sideways, and catches hold of the shell anywhere, by means of a clip provided for the purpose.

198. (*President.*) It runs on two bars?—Yes.

199. (*Major-General Simmons.*) If there was a necessity for it, then by filling up the passages and the magazines, you could place much more ammunition within them?—Yes, there is room for a great deal more.

200. (*President.*) How is that traveller worked on the bars?—By hand, quite easily.

201. It is within reach of a man?—Yes.

202. (*Colonel Harness.*) What is the height of the magazine here (pointing to the model)?—Something like 6 feet, I think.

203. (*Major-General Dickson*). This is for a 12½-ton gun?—Yes; you could apply it also to heavier guns, to the 18-ton gun.

204. Then the magazines are all large enough to put 50 rounds more in if you like, or at least one half more will go in if you choose to crowd them?—I think it is a question whether it would be advisable to do so.

205. (*President.*) You could put more into them at the risk of some inconvenience?—Just so; in a two-tiered work there would, of course, be more in each magazine than in a one-tiered work. The arrangement in a two-tiered work would be that you would make one set of magazines, and one set of shell-stores supply one tier, and another set of magazines and shell-stores supply another tier; otherwise there would be confusion as to the men running to the wrong lifts to receive the ammunition as it came up.

206. They will go alternately to the different tiers?—Yes; one will go to the lower tier and the other to the upper tier; in a one-tiered work that question does not arise.

207. (*Colonel Elwyn.*) This (pointing to the model) is sufficient to serve four guns?—Yes.

208. (*Major-General Dickson.*) You say that the magazines would serve the tiers alternately: that is to say, one would be devoted to the lower tier and the other to the upper tier. I am told that this one magazine here (pointing to the model), with powder on one side and shells on the other, is to serve both tiers?—No, it is to serve four guns; it would serve the two guns on either side of it on one tier.

209. (*Mr. Hawkshaw.*) Would it not be worth your while to relieve the men from lifting weights like 250 lbs.; could not tackle be easily applied?—That is a question for the artillery authorities at Shoeburyness. I believe so far as a shot of 250 lbs. is concerned, that they have come to the conclusion, (I know it was their opinion some time ago) that it was on the whole the best mode of lifting it, but if it is desired, tackle can be very easily applied as I have explained with regard to the missile for the 18-ton gun.

210. (*Major-General Simmons.*) Would it not be possible by carrying that lift up higher to deposit the shell at once from the lift on to the traveller, and so carry it to the muzzle of the gun similar to what is practised on board the Miantonimoh, the American monitor?—We have had such a proposition, but it really only amounts to this, whether the truck shall be a tall one or a low one; I think the low truck will be found the most convenient.

211. Without having a tall truck, by having an overhead traveller, the shot would then travel down to the muzzle of the gun at once from the main lift?—I see what you mean, but there would be a difficulty in bringing the shot or shell to the muzzle of the gun, because the muzzle of the gun is not always in the same place. I don't see how you will bring the shot out without some extra contrivance after you get it to the front. The shell must in any case be shifted to its bearer before being put into the gun.

212. Could not you manage it by some contrivance here, instead of what you have here (pointing to the model), and bring the traveller to any point over the muzzle?—Yes, you might do so, but I think that a truck running along is the easier method of the two.

213. (*President.*) It has been said just now that that arrangement (pointing to the model) is to supply four different guns; in that case you must have railways or overhead travellers to each of the guns, and then a man would hardly know which gun he was to take it to?—Certainly, and this would create confusion; you can run along the truck with the shell on it with perfect facility. Amongst a number of contrivances that one has considered, from time to time, for loading heavy guns, one comes round generally to the conclusion that the simplest contrivances answer, on the whole, the best.

214. (*Major-General Simmons.*) Are there any guns mounted in any of those casemates fitted up as you have described them?—No; just now we are about to put up a wooden representation of the casemate at Shoeburyness for exercise, and mean to have heavy guns mounted in it. I should mention that the arrangements I have described were approved, when we had matured them, by General St. George, General Taylor, Brigadier-General Lefroy, and Colonel Gambier. I asked them to come down here, and showed them in detail these models, and these proposals, and they all concurred in them.

215. (*President.*) Was that concurrence given verbally?—No, it was given in writing. General St. George signed the memorandum.

216. Those four officers, in fact, formed a committee to examine your arrangements, and they approved of them?—Those four officers examined them. They are the four highest artillery authorities, and they approved of them.

217. Were the arrangements that were submitted to them what you have been now describing to us?—They were identical.

218. (*Major-General Dickson.*) Any improvements or alterations calculated to facilitate those arrangements are all matters that will come under the attention of the people at Shoeburyness?—That is the intention. We are getting a wooden casemate put up for exercise, and any matter of detail that experience shows it to be desirable to alter, can, of course, be attended to and worked out.

219. The Ordnance Select Committee would then go into the details of the proposed alterations?—Yes; the trucks, lifts, and all the details will be subject to final experiment; the general principle of the construction of the work cannot be altered, though it would, of course, be applied according to the particular conditions of each work.

220. (*President.*) You refer to the space given in magazines?—Yes.

221. All the detailed arrangements have been made in concert with the artillery officers, I presume?—Not exactly; we made the plans, and afterwards submitted them to the four artillery authorities I have just mentioned.

222. Have you received many suggestions from the artillery officers as to the arrangements?—The chief suggestion that was made with regard to the points which I have just explained, was with regard to the position respectively of the powder and the shell lifts. There was a great deal of discussion as to whether we should have the powder-lift to the front or the shell to the front. It was held by some that it would be better to have the shell (which is of greater weight) to the front, because you would have a less distance to move it. Then in that case the powder would have been to the rear; but on full consideration it was subsequently settled, in concert with the same authorities, that it was better to adhere to the original arrangement of having the powder to the front and the shall to the rear. The fact of having to move the greater weight a longer

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distance is an inappreciable item; the greater risk was in having to move the powder; it is more secure to the front than it is having to be brought from a distance in rear.

223. (*Major-General Dickson.*) Will you now give us some information respecting works of a more open character?—I shall come to them presently. I should say, before going further, that here are all the plans that were laid before the Committee to which I have referred. Before leaving casemate works, I should say that in cases where we have turrets (or rather, where we propose to have them) above the casemates, we have powder and shell magazine arrangements for the turret separate from those for the casemate guns.

224. It is all done, I suppose, in the same way with a lift?—The detail is different in order to meet the peculiar circumstances of the turret, and that has not yet been before any Committee; it has been designed in the Fortification Branch; but has not yet been before the artillery authorities.

225. (*Major-General Simmons.*) But the design is completed, is it not?—Yes, I have a model of it.

226. (*President.*) Before we leave the basement floor, will you state what is the protection given to those magazines and shell-rooms—what is the thickness of masonry?—In this case (Garrison Fort at Sheerness) there are 14 feet of masonry, in many works there is also a glacis; then there is a passage behind the outer wall, and then an inner wall three feet thick.

227. (*Major-General Simmons.*) What are those 14 feet of masonry composed of?—Outside, of massive granite, then blocks of stone, according to the locality; and then inside it is faced with brickwork, for dryness. In some places, where it is possible, we have a glacis in front of that part (pointing to the model); for instance, at Hoo and Darnet, on the Medway,—at the Thames Defences,—at Gilkicker Fort, Portsmouth,—in short, at places where it is practicable, we have a glacis in front of that wall; but at certain places it is not practicable; I think, however, the wall is more than sufficient for anything. At Spithead there is a provision for adding iron outside, supposing that it should ever be thought desirable; but my opinion is that it would be an unnecessary expense to apply iron at this part of the work.

228. (*President.*) Will you be good enough now to explain the arrangements for open sea batteries?—Before leaving the casemated batteries I should say that there is a different plan for cases where there is no basement. Hurst Castle is an instance. There the magazines are placed behind, somewhat on the same principle on which they are constructed in open batteries—that is to say, behind each four or five guns there is a shell-store, and a magazine for 25 rounds per gun, for the immediate service of the guns on either side, and those are replenished, as required, from reserve magazines in other parts of the work.

229. There you adopt the principle of expense magazines, do you not?—Yes; in this case we do.

230. How many guns are supplied from those small magazines?—Four on either side.

231. (*Major-General Dickson.*) Are those for 25 rounds per gun?—Yes; the other 75 will be in the reserve magazines. This (pointing to a plan) is the magazine arrangement for the turret.

232. Does all this shell-filling room to there (pointing to the plan) belong to the turret?—No.

233. Have you any great magazine belonging to the turret?—There is a reserve magazine here (pointing to the plan) for the turrets.

234. (*Colonel Elwyn.*) That holds the 75 rounds for all the guns?—It holds 100 rounds for the turret guns.

235. (*President.*) That (pointing to the plan) will hold 200 rounds for one gun?—Yes.

236. Does this magazine on any occasion supply ammunition and shells to this (pointing to the plan)?—The two magazines in the centre of that block (pointing to the plan) are the powder and shell magazines for the turret; on either side of that arrangement is a magazine for some of the casemate guns.

237. Where is the general magazine for the supply?—In the basement of the old castle (further explaining the arrangement to the Committee). There are also reserve magazines along the gorge-wall of the work.

238. What are the arrangements for the supply from the reserve magazine to what you call the expense magazine?—By trucks.

239. By this passage (pointing to the drawing)?—Yes, if that passage were not being otherwise used at the time.

240. Do they come along the same passage by which the powder is taken out to the guns?—If the passage were being used for conveying powder to the guns, the ammunition from the reserve magazines should be taken to the expense magazines close along the rear of the line of casemates.

241. Will not it go along this passage (pointing to the same)?—No; not necessarily; it may go along the open. This shows the details of arrangement for one of the expense magazines (pointing to the same).

242. Where is the casemated magazine?—Here (pointing to the same).

243. Where does the powder come; what course does it take to get to the gun?—There is a hatch; there is the powder (pointing to the model); it comes out here into this passage (explaining), and the cartridge is carried thence to the gun.

244. (*Major-General Simmons.*) How wide is the passage for the truck?—3 feet 6, but the trucks are only used for shells.

245. Suppose the guns are all in action, four trucks will be going in that direction, and four in that direction (pointing to the model), in this 3 feet 6 passage, will they not?—No; you would have a supply of shells in each casemate at the commencement of an action; this supply would be leisurely replenished, for shells could be conveyed to the casemates faster than they could be fired from the guns, and the empty trucks would return to the lift in the open.

246. In addition to that, in this same passage there would be the traffic through the main magazine, through there (pointing to the model), to supply the expense magazine?—Yes; but it is not necessary to go along that passage any more than it is in an open battery. Behind the casemate you are quite secure, and protected from fire.

247. Have you anything like a railway laid here (pointing to the model), and a railway truck to bring the powder from the great magazine to the expense magazine?—There is no railway laid, but there is nothing to prevent one being laid. In a large fort like this, a tramway from the main magazine along the work on either side would be a great advantage, and should be provided; it is questionable, however, whether it would be requi-

site to construct it until a time of impending war. Before leaving the plan of the work at Hurst Castle, I should mention that the question referred to by some one a short time ago of an iron plate in front of the magazine had reference to the contingency of a shot coming through an embrasure, and then striking this wall (explaining) in front of the magazine passage. The question was discussed whether we should cover that interior wall with a plate of iron. The question did not arise with reference to the massive outer walls of the casemate.

248. Have there been any experiments made by shot striking live shells, which have determined the necessity of storing live shells in bombproof?—I think there have been some experiments made, but I will answer that question more in detail at a future time. This (producing a plan) shows in detail all the arrangements from the moment a shell leaves the magazine to the moment it gets to the gun.

249. (*President.*) Will you now be good enough to explain to the Committee the arrangements that are made in open batteries, and, first, where is the magazine?—The main magazine is immediately behind the rampart, and about in the centre of the face of each battery. There are two powder magazines and two ranges of shell-stores behind the battery, and they will hold 100 rounds per gun for the battery. Between each pair of guns there are also small expense magazines capable of containing 25 rounds per gun either of powder or of shells. This plan represents, as nearly as possible, the batteries at Southsea Castle.

250. Is that (pointing to the plan) the main magazine?—The main magazines are there and there. The main shell-stores are under here and here. This plan shows the proposed mode of stacking the powder (explaining).

251. (*Major-General Simmons.*) How do you get a shell from that shell-store; where does it come up on to the battery?—It would be brought on a truck specially made for the purpose to the terreplein upon planking.

252. Is this (pointing to the plan) an expense shell-store?—Yes.

253. Can you produce a section right through the work?—This (producing a drawing) is a section of the Southsea Batteries.

254. The amount of ammunition kept in the expense magazine, as I understand you, is 25 rounds per gun?—That is the number of rounds per gun the expense magazines will be capable of containing.

255. The other 75 rounds being in the other magazine below, in rear of the ramparts?—Yes. The magazines in rear of the ramparts will be capable of storing 100 rounds per gun, *i.e.*, 25 for the expense magazines, and 75 in reserve.

256. How are the expense magazines protected against direct fire?—By the earth and the wall in their front.

257. What thickness is allowed for that purpose?—Where the magazine comes there is the whole thickness of the rampart.

258. Is it not also protected by a glacis, or where is the magazine placed?—The soffit of the arch is 6 feet below the level of the crest of the parapet.

259. Then everything except the top of the archway is protected by a glacis?—It is, and by the ramparts; it is protected by the whole thickness of the rampart.

260. It appears from these plans that these expense magazines are covered by about 30 feet of earth, including the exterior wall of the magazine; do you consider that that affords sufficient protection from the direct fire of the heavy artillery of the present day?—In the position of Southsea Castle, I think it would probably be sufficient. *Col. W. F. D. Jervois, C.B., R.E.* 7 May, 1868.

261. It might there, I suppose, receive a direct shot from a ship?—A ship could only get a direct shot at this work supposing she had passed the forts at Horse Sand and No Man's land, and in this case she would be under the fire of those forts as well as of the Spit Fort and the Southsea Batteries. Considering the conditions of the case, it appears very improbable that these batteries would ever be closely engaged. If an enemy's ship ever got to a point where she could deliver a direct shot upon them, it would probably be with a view of attempting to pass them and get into Portsmouth Harbour. This is, however, an operation which she would not be likely to attempt.

262. Might not a direct shot from a ship-of-war passing strike that part of the parapet which protects the magazine?—It might, supposing the ship to be in the position I have referred to.

263. In that case do you think that 30 feet would afford sufficient protection to the magazine, bearing in mind the weight of artillery that we are likely to have to oppose on board ship, say, 25-ton guns?—With the wall it probably would be sufficient; but supposing it not to be so, the matter might be easily met by the substitution of Portland cement concrete for a certain amount of earthwork. I think it very possible that in some works the substitution of Portland cement concrete for a certain amount of earthwork may be found desirable.

264. It has been stated in evidence, I think, that on a late occasion a shot from a sea-service gun actually passed through 60 feet of well rammed earth?—I suppose that that was when the gun was close to the butt, and with a proof charge; this affords no criterion of the effect of a gun with a service charge fired from a distance.

265. In the arrangements made for the protection of the guns upon which the Committee have to report it is very desirable that they should have some practical knowledge upon the subject, can you refer them to any experiments which will enable them to judge of the amount of material that should be placed in front of such magazines?—I think that the experiments which were made upon earthwork at Newhaven are the best that have been made.

266. But those experiments at Newhaven having been made with 7-inch breech-loading guns can scarcely afford a criterion of the penetrating power of guns of 25 tons weight, such as might now be used on board ship?—No, but as I said before, there is no difficulty in strengthening earthen parapets as much as may be found necessary.

267. If it should be necessary, is it not desirable that the matter should now be inquired into while the works are in course of construction, rather than wait until a necessity arises for putting them in a condition for service?—I think it is desirable.

268. If a battery is constructed, and a parapet completed, and it is all covered up in peace time, is it not probable that these magazines may be regarded as safe by those who will have to work the battery at some future time, and who would overlook the necessity for adding to their strength

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when the time came for arming the batteries?—If nobody looked after the matter, the case you put might arise.

269. (*President.*) Will you be good enough to place before the Committee a section that will show exactly what amount of work a shot will have to do before it can penetrate a magazine?—I will do so.

270. I should like to have before me a section of Southsea Fort, showing exactly what a shot from a ship at point blank range would have to pass through to strike the magazine?—Here is one.

271. (*Major-General Dickson.*) Will you explain in what way you would bring up the ammunition from the main magazine, and convey it to the different expense magazines?—It would be brought up by trucks; there must be a tramway laid down in the rear. We have plans for tramways, but do not propose to lay them down in time of peace. The tramway runs in rear of the whole battery from the large magazines to any one of the ramps,

272. (*Major-General Simmons.*) Is not this a very steep ascent (pointing to a plan representing the interior of the works at Southsea Castle)?—I do not recollect what the slope is, but it does not appear steep. Planks would be laid down for the trucks to run over.

273. (*President.*) You have explained to us the mode of bringing up the shell by trucks; the plan for bringing them up is open to any suggestion or improvement that may be made?—Yes. I should say we do not contemplate laying down the tramway in peace time.

274. (*Major-General Simmons.*) Do not you consider that a fort like Southsea, which might be exposed to a sudden attack, should always be in a state of defence?—Whether it would be desirable to lay down a tramway in time of peace is a question of money. The tramway would in a short time require repairs and renewal, and we try to keep our incidental expenditure for such services as low as possible.

275. You do not consider, I presume, that a mere gravel slope for the trucks would be sufficient?—Probably the truck would not run over the gravel sufficiently well; we always contemplated having wooden tramways, and we have a plan with a tramway shown upon it.

276. Would not slopes of one in six, even with a tramway, be rather steep to get up a 300 lb. shot in a small truck?—The ramps are very short. The guns are only 12½-ton and 7-ton guns at this place; a shot of 250 lbs., which is the weight of that for the 12½ ton gun, is very easily dealt with when placed on a truck.

277. (*Colonel Elwyn.*) Is there no heavier gun in Southsea Castle than a 12-ton gun?—There is only one piece heavier than 12½ tons, viz., a 23-ton gun at the end of the left flank of the West Battery. The ramps that the shell for this gun would have to pass over are very gentle.

278. (*President.*) These works were constructed before the idea was entertained of their being attacked by such heavy guns?—At the time these batteries were designed, in 1862, no one had fully realised the extent to which the power of artillery would be developed. With regard to the question of penetration, even supposing the 33 feet of earth to be penetrable by the heavy artillery of the present day, it is a question whether the the shot would not be brought up by the wall inside the earth. As regards this point, however, whether in respect of this, or any other work, it is necessary to consider the position which ships would probably occupy in engaging the work.

279. (*Major-General Simmons.*) As to that, it has been stated in evidence that double shells are now used with very large bursting charges, and do you not think that a greater thickness and greater strength of parapet are requisite, bearing in mind that the effect of the explosion of those shells is like the explosion of a mine?—If considered necessary after taking into account the relative position of the battery, the case might easily be met by the insertion of a stronger material in substitution of a certain amount of earth. It might be a question whether you would put a plate of iron on the wall of the magazine there (pointing to the plan); it would be a question for consideration as to what would be the most economical way of obtaining the required resistance; but there would be no difficulty in obtaining it without disturbing the design of the batteries.

280. (*President.*) Are the arrangements in the magazines in those forts almost the same as those we have seen in the casemated forts--the interior arrangements?—Yes; the interior arrangements for storing the powder and the shells are the same. This (pointing to a plan) shows the arrangements for storing the powder, and this shows (pointing to the same) the arrangement for storing the shells.

281. (*Major-General Dickson.*) How many rounds would the place you have pointed out contain?—100 rounds per gun.

282. But two of these are main magazines, are they not; one on each side?—Yes; and that completes the storeage for 100 rounds for each gun of both batteries; there is extra accommodation for 25 rounds per gun in the expense magazines. I should explain to the Committee that we have in all cases a separate lamp-passage, which you will see here (pointing to the model); this passage gives access to these lighting-places; the entrance to the magazines is away from them in another passage, and on this side (explaining).

283. The powder and the shot would be brought out at two different ends?—The shell are in another store altogether. The shell stores are here (describing).

284. (*Major-General Simmons.*) Do you think that the arrangement for getting the shells from the lower level or from the terre-plein of the battery to the terre-plein of the rampart might be facilitated by having lifts with differential pulleys?—When you have once got a shell on to a truck, it would be easier to run it forward on that truck than it would be to go through the operation of bringing it from the magazine and putting it on to a truck, then lifting it by a differential pulley, and putting it on to another truck. All these minor details are however subject to experiment, which has yet to be made.

285. (*President.*) Are the arrangements made in open land batteries much the same as these which you have pointed out?—The arrangements for land-works may, I think, be treated upon different principles. You have not there to deal with large guns, you have plenty of time to make your preparations, you are not liable to be attacked by such heavy artillery, and the whole of the circumstances respecting works intended to resist attack by land are different from the conditions for sea batteries.

286. (*Colonel Elwyn.*) Take Dover for example?—I am talking now of such works as those at Portsdown, or Staddon Fort at Plymouth. An attack upon these implies that an enemy had landed in the country and had obtained a footing, and that would be a comparatively long operation. Before leaving the subject of the artillery arrangements for sea-batteries, I should like to explain what arrangements are made as to the side-arm-sheds. There is a special store provided to contain the side-arms, handspikes, and tackle for each gun, so that the detachment for each gun can go to its particular bay, take its side-arms, &c., and go with them to its gun.

287. Can you point out on the drawing the position of those places?—Yes; they are here (describing the same). This is a plan of a tackle store and a hand-spike store; there is a door at each end, and, as the Committee will perceive, there is a rack for side-arms in the centre, a rack for hand-spikes and levers at one side, brackets for tackles and hooks for tackle on the other side, and so arranged that each detachment can go to each gun, and there are tackle, hand-spikes, and side-arms for 12 guns complete.

288. (*Colonel Elwyn.*) Is there space sufficient for the side-arms for each gun to be kept actually separate?—Yes; these are actually fitted and calculated for.

289. Are any of these constructed yet? These are constructed at Southsea.

290. (*President.*) Is the same principle adopted in all the batteries?—It is either adopted, or intended to be adopted.

291. May we take it that this is the arrangement intended to be carried out in all new works?—Yes; and besides this there is a general store for Artillery small-stores.

292. (*Major-General Simmons.*) What thickness of roofing protection do you allow against vertical fire for the expense magazines?—There are 2 feet 3 inches of brickwork over the expense magazines, in addition to the concrete and earth.

293. Take Southsea Fort for example?—There is a 3-feet arch, then 9 inches of concrete and 6 feet of earth; the arch is of very small span, of course the strength is proportionate to the span. As far as vertical shells are concerned, they have no more power now than they had half a century ago. We had a 13-inch shell then, and we have nothing more powerful now.

294. (*Major-General Simmons.*) Is there any record showing the effect of a 13-inch shell falling on a bombproof?—The experiment is about to be made.

295. (*President.*) Upon what is the thickness of protection to be provided against vertical fire founded?—It is founded, I may say, on the practice of ages, at all events upon the practice of engineers in all countries, and there have been no circumstances of late years, as regards vertical fire, which have suggested any reason for deviating from that practice.

296. Are you aware whether in any foreign countries they have adopted a greater thickness of protection in consequence of the advance made in artillery?—I do not know that they have, but I think, generally speaking, as regards our magazine arrangements, so far as I am aware, we are more complete and more secure than they are in foreign works, much more so than they are in the American works.

297. Do you mean against the effects of vertical fire?—I am speaking generally. The difficulty of experimenting upon structures with vertical fire is the almost impossibility of hitting them at a sufficiently long range to obtain the desired effect.

298. (*President.*) Can you tell the Committee what space is provided for the heaviest guns, and guns of different calibre which are to be mounted in the sea forts?—We contemplate mounting 18-ton guns in some casemates.

299. What space do you consider it is necessary to allow between two 10-inch guns?—On a straight face, you might work them very well in a space of 22 feet. In those works which are made partly of granite and partly of iron, we have provided 24 feet.

300. (*Colonel Harness.*) That includes the space occupied by the pier?—Yes.

301. (*President.*) What space does that give for the gun to traverse?—The gun will traverse nearly 70°. I should say, for guns of about that size, the Russians put them 14½ feet apart, and the Americans put them 21 feet 6 inches apart.

302. (*Colonel Harness.*) Is that in casemates where piers are taken out?—Here is an American plan for a casemated work with 13-inch guns (producing a plan), "plans, sections, and details of embrasures for 13-inch guns" (explaining it to the Committee).

303. This is 17 feet (pointing to the plan)?—Yes; and instead of 17 feet, we allow 20 feet.

304. (*Major-General Simmons.*) Is this a late construction?—Yes, I saw them building in 1865.

305. Was it in a situation where the guns required much lateral range?—They get 60° lateral range; they have racers crossing one another. The Russian plan gives 14½ feet apart, as shown by that photograph (handing in the same). That is a Russian shield.

306. (*Colonel Harness.*) Are there no piers there?—No; but they are only 14½ feet apart; we have 20 feet without a pier; the Russians have 14 feet or less than that between the iron struts of their shields.

307. (*Major-General Simmons.*) Then the racers also pass into the part of the pier that is not built up solid, and you actually get more than 20 feet?—Yes.

308. So that, in reality, for traversing, you get 24 feet?—Yes, as against 14½ feet, which is the dimension adopted by the Russians. There is no country, that I know, which provides anything like the same facilities, as far as space goes, for working guns that we do. Before we commenced constructing these granite casemates for iron embrasures, we had a model in wood placed in Woolwich Arsenal with wooden guns, and platforms mounted in it full-sized, expressly to enable the artillery authorities to judge whether the space was sufficient, and the space was approved by the artillery authorities at the time that Colonel Bingham was Deputy Adjutant-General.

309. (*Major-General Dickson.*) Was that 24 feet?—Yes.

310. It was discussed by the artillery officers, and approved of by them?—Yes, subsequently, when we were contemplating having the exterior walls of forts wholly of iron, the question whether we might not reduce the distance somewhat was discussed by the Fortification Committee; and it was determined, as is shown here by a minute signed by General Lefroy, that we might in that case reduce it to 22 feet. The minute says, "Looking at the slightly diminished space occupied by the piers in iron structures, the Committee think that the interval between the guns

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may be reduced to 22 feet instead of 24 feet, as in a casemate wholly of granite."

311. (*Major-General Simmons.*) Who were the members of that Committee?—General Lefroy; Colonel Harness, R.E.; Captain Cooper Key, R.N.; Colonel Collingwood Dickson, R.A.; Lieutenant-Colonel Jervois; and James Fergusson, Esq. The Defence Committee, under the Duke of Cambridge—of which General Taylor, R.A., Inspector-General of Artillery, and Colonel Gambier, Deputy Adjutant-General of Artillery, who were *ex officio* members—concurred in this recommendation.

312. That was 22 feet?—Yes.

313. Was that for all forts, or any position in particular?—The 22 feet had reference to all works.

314. In cases requiring extreme lateral range?—You cannot get out of an embrasure more than about 70°, without very much enlarging the size of it. I should observe that in curved works, the interval between the guns must obviously be greater, according to the sharpness of the curve, if as much as 70° lateral range is to be maintained. In the case of the guns at Gilkicker and some at Hurst Castle you will find that the lateral range is somewhat less than 70°, owing to the curve of the works.

315. Does that space of 24 feet contemplate the erection of traverses between the guns, the piers not being solid?—If there is a gun in every casemate, you cannot have traverses between the guns, and at the same time work them at extreme lateral range. Provided that muzzle-pivoting carriages are used, as I consider they ought to be, I think the necessity for traverses in casemates is very doubtful; for the embrasure is practically filled; there is only just sufficient space for the muzzle of the gun.

316. In the interval of time while the gun is being loaded, the embrasure is unprotected, is it not?—Just against the chance of a shot coming in.

317. Or a shell?—Yes.

318. The explosion of a shell in a casemated work of that sort would cause considerable inconvenience probably?—Not nearly so much as it would on the deck of a ship, where you only have 16 feet between the guns, and where the ports are much larger than in our forts.

319. I think it is on record that on board the "Excellent" they tried some experiments of that nature with a shell containing a 5-lb. charge, and the smoke was the cause of so much annoyance that it shut up the fire of the guns for some little time?—The question is one of obtaining whatever protection traverses might afford against such contingency at the sacrifice of much lateral range, and of freedom for working the gun. Besides the traverses, unless continuous, would not prevent the smoke from affecting the detachments of the neighbouring guns, should a shell burst in any particular casemate.

320. (*President.*) Do you consider that the traverses would always lead to smoke hanging about them?—Yes; I myself much prefer having the battery open. The traverses would interfere with the free working of the gun. I should add, as regards the passage of the powder and the shells from the lifts communicating with the magazine, which we have before discussed, the passage of the trucks which are taking the shells to the guns, and the passage of powder to the guns, would be interfered with by the traverses.

321. They all pass round the rear of the guns, do they not?—Yes; but they have to come through that archway (pointing to the model). The chance of a shot or shell coming into an embrasure is a a thing which you must submit to rather than incur the inconvenience and serious reduction of the efficiency of the battery which would arise from putting a traverse between the guns.

322. You consider the objections to traverses greater than the advantages to be derived from them?—Yes; and the same reasoning that applies to the disadvantage of traverses in batteries of this sort would apply with greater force to the case of a battery of a broadside vessel. The dimensions that I gave just now as to the space between the guns apply to casemated works; in earthworks the distance is much larger; it is a minimum of 40 feet.

323. That, as far as the space for working the guns is concerned, would give the same space for traversing the guns as in the casemates?—Yes; 70° for a 12-ton gun: where there is a traverse the interval between the guns is much more,—55 to 60 feet.

324. The next question that arises is as to the amount of protection that will be given in an earthwork between two guns?—That is, in fact, the same question as the one we were going into about the magazines.

325. No, because it involves the lateral effect of a shell throwing the earth on each side, and choking up the embrasure?—But the principle of dealing with it would be the same: that is to say, we should take out some of the earthwork and substitute concrete, and I am disposed to think that that should be done.

326. (*Major-General Simmons.*) What is the breadth of the shield, which it is proposed to place in the embrasures?—A minimum of 12 feet, but I think that in the case of the Southsea batteries (and this applies to the case where struts are used) when the shield is fixed as we propose, according to the more recent plans, into a sort of caisson, filled with concrete and plated outside, then the caisson and plating also will make a more extended shield.

327. Will the caisson be protected by a thick plate?—Yes.

328. What will be the total breadth of the caisson and the plate?—The caisson would occupy that angle (pointing to a plan), where there is a weakness, just in the angle at the junction of the shield with the merlon; this (pointing to the plan) is for a very large gun and for a special case, and this is 10 feet, so that you may practically put a bombproof over the gun in an earth battery (explaining by the plan).

329. In the plan before me it appears that on the outside of the iron shields there is a part of the parapet which is not more than a thickness of something like 10 feet, and do you not think that that is a condition of things that would be exceedingly dangerous to the gunners when attacked by percussion shells?—I think that some arrangement is necessary to obviate that weakness, and a caisson on the principle shown here (pointing to the plan) is one mode of remedying it. There is not space there for a sufficient amount of concrete at the angle, and therefore you must obtain it by having the concrete contained in an iron caisson protected by a plate.

330. Even so, would there not still be a very weak portion of the parapet towards the exterior of that plate?—Then you would come to what we were speaking of before, a mass of concrete.

331. Or some other arrangement of the guns?—Yes, supposing another arrangement preferable.

332. (*President.*) Supposing it were put in, there would be a large caisson there (pointing to the plan)?—Yes, about there. Before the present craving for invulnerability arose, people used to be content with works like this (sketching); there was a parapet and embrasures like these with acute angles at the throats, and large openings were cut in it (describing); the throats of these embrasures were liable to be shot away by 32-pounders, or 24-pounders, or even by guns of less size. Weak points in works may of course be obviated by the expenditure of money; the question is, as to what degree of invulnerability you are to go.

333. (*Major-General Simmons.*) Are not the conditions of warfare entirely changed by the introduction of shells, bursting with percussion fuses, and is not the slight obstacle which 12 or 14 feet of earth would present one of the most favourable conditions for bursting these fuses, in which case the splinters would be thrown among the gunners?—No doubt many cases may be put in which men would be exposed to danger, whether attacked by heavy or light guns or by musketry; there is always danger either in attacking or defending a work.

334. But in a work to be attacked by shell guns, would not the gunners probably be more secure if the guns were mounted *en barbette*, than if they fired through embrasures, with thin merlons, which would be more calculated to burst the shells?—I think not. The gunners in this case (pointing to the plan) would be standing behind an iron shield 12 feet broad.

335. According to the plan it appears there is a certain point some feet wide that would not be 12 feet in thickness?—In answer to the question as to whether the men would be more secure with the guns *en barbette* and upon a low level, I should say no; but if they were 100 feet or so above the sea, I should say, probably, yes.

336. I am supposing that the case of a work exposed to a direct fire, and not to a flank fire?—Yes.

337. Would not a shell be likely to fill up both embrasures if it lodged and burst in the centre of the merlon?—There would be a liability of that. In reference to this point I may observe that I know of no broadside ship that is not capable of being pierced, and its battery silenced, by a 9-inch gun at nearly 1,400 yards, and you are at least under better conditions (pointing to the plan) for fighting those guns than you are on board those ships.

338. My question had reference not to ships, but to works, and whether one mode of constructing the work would not give you greater security than another?—Certainly; when you are a certain height above the sea, barbette guns are admissible, but I do not think they are so at this height above the water (pointing to the plan); if they were, the guns would be liable to be silenced, not only by artillery but by musketry, for the gunners could not serve them. I think it is better to have guns protected by shields 12 feet broad, with such merlons between them as are sufficient, whether of concrete or of earth, or of both, than it is to expose the guns altogether, and so to render it impossible to serve them. The experience obtained at the attacks upon Fort Fisher, and other places during the American civil war, showed that the gunners could not stand by the guns except in casemates, owing to the explosion of shells over head or directly. I believe that now-a-days the protection of the parapets is in some form or other necessary for the efficient working of the gun; and it was with that view that I have had these plans got out, showing how they may be protected, not only in front, but overhead also, the overhead work being left to be done at the time of the expected attack, as you see here (pointing to the plan). This plan also shows how the merlon between the guns may be strengthened.

339. Has any embrasure, prepared in this way with concrete caissons on either side, been as yet the subject of experiment?—No; it is only lately that we have adopted this plan.

340. Have any been constructed?—Not of this sort. We are preparing parts of the works at Malta and Gibraltar for this arrangement of shield.

341. Do you not think it would be desirable to test them in the first place?—There can be no doubt whatever of their answering; it is only a question of the extent of the armour you put outside of them.

342. Have all these been prepared for muzzle-pivoting guns?—The shields I refer to are not yet made; we are only preparing parts of the works for their reception. My view is that the shields should be prepared for muzzle-pivoting carriages. I made a proposal some time ago that no carriages for shields or casemates, other than for muzzle-pivoting guns should be proceeded with, but my proposition was not adopted. My view is that we shall very soon be able to settle what is the best muzzle-pivoting carriage, and that we should not construct any until that point is settled, because for every non-muzzle-pivoting carriage constructed, we shall have to make an embrasure which will be larger than necessary.

343. Is the muzzle-pivoting carriage much more expensive than the ordinary carriage?—That depends on what carriage is adopted. I believe that it is not materially so, but there are three muzzle-pivoting carriages to be tried, and it is a question which shall be adopted. This is an arrangement (pointing to a plan) for a battery *en barbette* at a considerable height, about 200 feet above the sea. This is Hatherwood battery, one of the defences of the Needles (explaining the same to the Committee). The guns are nearly 50 feet apart, and the ammunition is supplied to them by an underground passage. It is conveyed from the magazine and the shell-store to two expense magazines, and the arrangement is this (explaining). In this case the battery *en barbette* is desirable, because the enemy could see nothing from seaward, except the muzzles of the guns, and would scarcely be able to hit it. When you come to land-works, then you open another question. It has always appeared to me that, referring for example to Portsdown, the circumstances are very different from those for defences against naval attack; the time you would have to make preparations in works against a land attack would be amply sufficient to enable you to extemporize shell stores and expense magazines, in many cases, in rear of the guns. We have provided them to a certain extent, and we can provide them to any further extent that may be considered desirable by the Artillery authorities. The question is, however, of another character from that of the supply of ammunition to coast batteries, which require to be worked rapidly, whilst in the case of land-works, the fire of which is either directed against stationary objects or objects moving slowly, this rapidity is not required.

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344. (*Colonel Elwyn.*) But there are some works which have part land and part sea batteries, as at Dover?—Wherever batteries are required to work to seaward, there you should have coast battery arrangements, and it is with a view of making such arrangements in cases of batteries not yet supplied with guns, that we have taken an item in the estimates applicable to such requirements

345. (*Major-General Simmons.*) Are they all calculated for in the estimates under the Defence Act of 1867?—No; those estimates are only for works constructed under the several Fortification Acts which have been passed during the last seven years. If they were works completed, alterations for the supply of ammunition to them would come under the head of alterations to the works consequent upon the adoption of the modern armament.

346. But that is not provided for under the Defence Act?—No.

347. The cost of such alterations would be included in any estimate that might be nesessary for the completion of all these works?—As a rule, I I think not, because such alterations would result from the adoption of a modern armament.

348. According to one of the references to this Committee, we are to state whether the estimates are sufficient to cover the completion of these works, and I suppose we shall have to consider these matters?—The plans to be laid before you will be approved plans, showing everything considered by us to be necessary to be constructed permanently. It is a question for consideration of the Committee whether it is necessary in land works to provide all the accessories of permanent construction, in order to be ready in every point to meet a land attack; to my mind it is very doubtful whether it is necessary to incur the expense of constructing all these appliances permanently during peace time.

349. (*President.*) You think that some of these arrangements might be extemporised in a time of war?—Yes; in land works a great deal is usually left to be done at a time of impending war. All the flank defences of the Portsdown and other forts are, however, provided with expense magazines. Here (pointing to the plan) is the main magazine, containing accommodation for 2,500 barrels of powder, and here (describing) is a communication from it to all the flank defences and to the bomb proof barrack, which is in rear of the work. Each of these flank defences, or caponnières, has a little magazine in connection with it for the supply of its guns, then here (pointing to the plan) is the central staircase going up to the main work from the main powder magazine. There are small expense magazines, under bomb-proofs, on the parapet, and the question is whether more than that is necessary. I should say that this, being one of our latest works, is provided with these things more perfectly than many other land works.

350. Are all the magazines excavated out of the solid chalk?—Yes. I should remark, as I stated before, that in the works that were constructed before we had settled the more recent plans, we shall have to provide some new arrangements of detail as regards the service of the guns, and we take a special item in the estimates for alterations to adapt some modern armament.

351. (*Colonel Elwyn.*) You mean works that were constructed before you had to provide for the enormous guns of the present day?—Yes; and before the principles, which seem very simple now, were fully settled.

The witness withdrew.

(*Adjourned till to-morrow at One o'clock.*)

Friday, 8th May, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., RE.
Colonel T. ELWYN, R.A.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel F. M. EARDLEY-WILMOT, examined.

Col. F. M. Eardley-Wilmot.

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352. (*President.*) You are Commandant of the School of Gunnery at Shoeburyness?—Yes.

353. The Committee are desirous of obtaining your opinion as to the arrangements made for magazines and the service of guns in the new works; and I will first begin with the casemated works. This is a basement plan (pointing to the same), showing the arrangements made, and that is a model, on the side table, showing the fort at Garrison Point, Sheerness. In the basement plan you see the store for shells and the store for powder, the powder-lift here (pointing to the same), and the shell-lift there (pointing to the same)?—I have never seen this before. We have a representation of an iron front, circular salients, connected with a straight curtain, with three ports in it, from which to fire the 12-inch gun, and we find that at a certain angle it is impossible to fire two guns at the same time, but from a straight line front like that, probably it would not be so.

354. Have you had any experience of the service of heavy guns?—Yes; but not with reference to authorized magazine arrangements. We have arranged all that ourselves, according to a plan that we thought the best. The 12-inch gun is placed on a turn-table, behind a wooden shield, which represents an iron one with embrasures in it, and in the rear of that, behind it, the bank falls down suddenly, to represent the magazine for the shot and shell, and everything connected with it; a shot-lift has been placed overhead, and all the arrangements made for firing the gun.

355. Those are your own arrangements?—Yes; they are not the arrangements used in the service, but are carried out, to a certain extent, to show the facility with which a gun of that sort can be

handled. The other day five rounds were fired from the 12-inch gun,—firing at a mark, and laying the gun carefully for line and accuracy—in less than eight minutes, with shell.

356. (*Major-General Simmons.*) What was the weight of the projectile?—600 lbs. The gun was not fired in a rough way, but was laid accurately at the range every time it was fired. It was an experiment for range and accuracy.

357. (*Colonel Elwyn.*) That is nearly the rapidity with which the 32-pounder on a ground platform is fired?—We can fire the 9-inch gun faster than that a good deal. I can give you the exact time of firing the 12-inch gun. The first round was fired in 1 minute and 40 seconds; the second round in 1 minute and 36 seconds; the third round in 1 minute and 25 seconds; the fourth round in 1 minute and 33 seconds; and the fifth round in 1 minute 25 seconds.

358. In that practice what was the arrangement for putting the shot into the gun?—The gun stands on a turn-table, and every time it recoiled inboard we turned the turn-table round, and brought the gun under a small lift—hoisted the shot up with tackle, and put it into the gun; then brought the gun back to its position, laid it and fired again.

359. Could the 9-inch gun be served with shot or shell without tackle—by hand?—Yes; four men do it always without tackle.

360. (*Major-General Simmons.*) Is the gun worked on a traversing platform?—It is fired from a garrison sliding wrought-iron carriage, on a casemate platform, by a detachment, consisting of one non-commissioned officer and 13 men. The gun is placed behind wooden framework, representing the size of a casemate, so that all the loading must be done exactly as it would be done in such a work as this; for instance, we fired, at a distance of 1,000 yards, at a moving target, 5 feet square. We fired 10 rounds, and the first round was fired in 1 minute 17 seconds; the second round in 1 minute 17 seconds; the next in 1 minute 8 seconds; and the next in 1 minute 10 seconds. I should say that we started with the gun loaded; the first five rounds were fired in 4 minutes 52 seconds, the target moving about 3½ to 4 miles per hour; the second five rounds were fired in 3 minutes 22 seconds, the target moving about 8 miles per hour; and out of those five rounds we struck the target twice, the target moving at the rate of 8 miles an hour; and there was not a single shot that was three targets' length from the target.

361. What weight was the gun?—Twelve tons.

362. (*Colonel Elwyn.*) I think you stated that the shot was put in by hand?—Yes; by four men.

363. (*President.*) Was the target moving on in the same line all the time?—Yes; it was moving on a curve at 1,000 yards from the gun.

364. It began at one end, and moved forward?—Yes; we fired five rounds before it got out of range.

365. What number of degrees would a gun traverse in that curve?—Seventy degrees.

366. (*Colonel Elwyn.*) Did you fire the 12-inch gun at a moveable target?—Yes, once or twice; but not on the occasion to which I have referred.

367. How many hits did you make with the five rounds, take first the 12-inch gun?—None. We were only doing it to learn the drill. When we fired the 600-pounder it was at a fixed target.

368. (*Colonel Harness.*) Did you say that when you fired the 12-inch gun, before loading, the muzzle was brought close to the hoist?—Yes; it was inboard altogether.

369. When lifted, the shot was carried to the muzzle of the gun at once?—Yes; it was lifted close to it.

370. Did you bring the hoist to the muzzle or the muzzle to the hoist?—We brought the muzzle to the hoist; we fixed the hoist first; it was merely a temporary one.

371. (*President.*) Do you think that the fire would be as rapid in bringing the gun in that way, round every time, to load it, as if it was loaded more nearly in the direction in which it was to be fired again?—Yes; I think more so.

372. Supposing it to be on a turn-table?—Yes, of course.

373. Where there was no turn-table, such an arrangement would not be adopted?—No; I should like to see a carriage constructed with that view. I think that it would pivot on its centre, so that the gun might be slewed inboard at once. By that means you would gain two objects—first of all, you would place your men out of danger from rifled small-arms; and, secondly, you would be able to load with the greatest ease, as you would not have to push those long 15 feet sponges through the port-hole to load.

374. What is the diameter of the turn-table?—23 feet.

375. (*Major-General Simmons.*) Does it turn with perfect ease, without liability to jam?—With perfect ease. All it requires is to be kept in good order. If you let it stand for many weeks it becomes very stiff; but if you move it every day or every three or four days, there is no difficulty whatever; neither is the vibration of it great. We stand upon it when the gun is being fired.

376. Could such a turn-table be applied to a fort like that (pointing to the model), where there are 24 feet between the guns; if you look inside the model you will see the arrangements?—The pier between the two guns would prevent that being done.

377. It depends upon the space, does it not; there are 24 feet from centre to centre?—Yes.

378. (*Colonel Harness.*) The turntable is 23 feet in diameter, but the casemate is only 20 feet wide between the piers?—Yes.

379. (*Major-General Simmons.*) Racers are laid on the turn-table, I presume?—Yes.

380. So that the turn-table, in its firing position, is always at the same point?—Yes, depending upon which port it is fired from.

381. (*Major-General Dickson.*) Have you ever tried loading and firing from the ordinary platform?—A few times.

382. Can you give any idea what difference in the rate of firing it would make?—It would make very considerable difference; the ports are very small, and the sponges and rammers are very large, and it requires great management to get in. I am not very certain of the number, but I know that on one occasion we loaded and fired it from the extreme part, and loaded again and brought the gun round, and fired from the opposite extreme, with only two minutes and a half between the two.

383. (*Major-General Simmons.*) Was that on a turn-table?—Yes.

384. You stated, I think, that two of those guns could not be fired from the adjoining ports?—Yes.

385. At what distance apart were those ports?—It is more form than distance; the model in

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timber consisted of two circular projections forming arcs of 120°, joined by a straight line continuous with the chords of both. There are two ports in each of the circular portions, 35° on either side of their centre lines. By means of the turntables the guns can be shifted from one portt o the other. It is impossible to stand at the left port of the right turret while this gun is being fired from the right port of the left turret; we tried it, and it would knock you down. Ordnance Select Committee Report No. 4298 (19th October, 1866), touches this point.

386. (*President.*) You have had no experience, perhaps, of the effect of the explosion of one gun over another, as in the arrangement shown in the model of the fort at Garrison Point, Sheerness?—No.

387. Supposing a man was loading the upper gun, and the lower one was fired, what would be the result?—I do not know that it would hurt a man much, because the man would be in-board.

388. I suppose that a small projection over the port would prevent that?—Yes; it should be close over the port, because the effect of the explosion of those large charges on the ground in front is very great indeed.

389. (*Major-General Simmons.*) You spoke of the accuracy of the fire at a moving target; was the target always at the same distance from the gun?—Yes, always; it moved on an arc round it.

390. What would have been the effect, or would the results have been the same, if the distances had been variable?—Of course the accuracy might probably not have been so good, but I think that under any circumstances you would hit a ship every time. The difference in the range would amount to 113 yards.

391. (*President.*) That model on the table will show you the proposed way in which the powder and the shot are to be brought up, and you will see that the powder is brought up as near to the muzzle of the gun as is possible; but it has to supply, in the case of batteries of two tiers, two guns on each side, and the shells are brought up to the rear of the gun in the same way. There has been some discussion as to whether it was advisable to have the powder or the shot in front of the gun; what is your opinion upon that point?—As I understand the model, whoever is in command of the battery may put whichever he likes there (pointing to the model); both rooms appear to be of the same size.

392. The arrangements are to bring the powder near to the muzzle of the gun, and to bring the shells up from the rear, so that they could not be transposed. You will see by this model that the powder comes out of this door, and the shot comes out through this door (pointing to the model). Do you consider that it is the best arrangement to have the powder brought up near to the muzzle of the gun, as it has been suggested, or to have the shell brought up near the loading point, as the distance would be shorter to move the heavier weight?—I prefer the plan in which the powder-lift is in the front pier, and the shell-lift in the rear pier, because when the gun is traversed to its full extent towards its own shell-lift, supposing the alternative arrangement to be carried out, the shell must be brought in rear of the slide, as there would not be room to take it up direct to the muzzle. In quick firing there would probably be more confusion from the chance of having two parties of say four each, both desirous of obtaining a shell in such a confined space. The lighter weight (cartridge) should be handled where the space is least, requiring only one man per gun; the other Nos. will be about the gun. The difference of distance is scarcely material practically, because if the bearer is independent of the truck, and there are two bearers per gun, the supply could be kept up a good deal faster than they could be fired away. Even with only one bearer, the time required to return it to the lift and bring it up is less than that for running up, laying, firing, sponging, inserting cartridge, and ramming home. If trucks have comparatively broad wheels, say 5 inches, no damage would be done to the tackle over which they might pass, nor would such tackle offer an obstacle sufficient to cause delay. The tackle might be lifted. Some confusion must be expected at first, as the shell, &c., will have to be brought up, and other duties performed, first on one side of the gun and then on the other, depending on the training of the gun. As regards the level at which the shell is taken out, I conclude it will be such as is most convenient for the height of the truck.

393. Do you think that a shell would explode more easily?—Not at all; I think the effect would be worse, if it did.

394. By the arrangement that you propose, the shell would have to be carried in the rear on each side, in order to get it to the other two guns?—Yes; I would rather have a heavy weight near the muzzle of the gun, if the arrangements are more convenient than in the other way; but I do not think it signifies.

395. (*Major-General Simmons.*) The reason why the powder was proposed to be brought to the front was that it was better protected by the shield?—I do not think that anything will explode the powder, except being struck by a shell, as it is in a zinc cylinder. A mere flame would not explode it, and the same thing would occur to a loaded shell, if it was struck. Powder is more easily handled than a shell.

396. Is it, in your opinion, necessary to have any special arrangement, such as a traveller, from the lift to the muzzle of the gun, to carry the shot along; or do you think that to run it along in trucks is sufficient?—I should have something in the form of a rail, for the handspikes and tackle might be lying about, and it would be a very troublesome thing to run over them.

397. If you had to supply four guns from one lift, you would want rails to each separate gun, and would not that make it rather complicated?—Not having gone into the question, I can only state what is the general experience and practice. We find very great trouble in all these contrivances, for trucks and so on, in going over platforms where the tackle is lying about, and the sponges are liable to be in the way, and things of that sort. A very slight thing oversets them, and they are sometimes very troublesome. The great object should be to afford facility to get the shot up, whatever the best way of doing that is. I do not think it is worth while altering the arrangement already made upon such a point as that. I would have rails laid down for the truck to go on itself.

398. (*Colonel Harness.*) The hand-spikes would lie across the rails, would they not?—Yes.

399. (*Major-General Simmons.*) Is it not probable that there would be fewer obstructions than you describe to be traversed in the path of the shot if it was brought up in the rear rather than

in the front, passing round the two guns?—Very likely it would be so.

400. At the rate at which you now practice with the 600-pounder, with what speed should you require to be supplied with shot for a given time?—I should think that you would arrange the shot close to the gun; that is what I should do if I had command, so that they might be ready always.

401. Or the shell?—Yes, close to the muzzle of the gun.

402. You would have to keep up the supply, but at what rate, supposing that the first supply was expended?—It depends upon the speed with which you could fire. I can only tell you what we have done, which would be at the rate of about 30 rounds per hour for the 12-in. and 60 for the 9-in.

403. (*Colonel Harness.*) How often would you require to relieve the men?—It is a very little exertion to any of them, but they may be changed as often as necessary.

404. Take the 600-pounder, how many shot would you require in a quarter of an hour to supply four guns?—About 24.

405. (*President.*) Do you suppose, considering the delay which would be occasioned by the smoke from four guns, that such a fire could be sustained?—I should think not, but if there was a favourable wind to clear it away, it could be done.

406. The next point is the space required for working these heavy guns in casemates, supposing that you do not use iron turn-tables; have you turned your attention to that?—We never have had two guns, alongside one another, of that size.

407. (*Major General Simmons.*) Have you never tried it by confining the space with screens of wood?—We have taken the size of the works that are in course of construction, and we have made representations of them with a wood-work front, and we can work with great facility inside.

408. (*President.*) What space did you take?—About 24 feet.

409. In these forts a space of 24 feet is allowed, and that appears to give an angle of 70° for each gun clear of each other?—I think you do not want more training than that; that is abundant room to work the gun in. If the gun is jammed far against the pier, sometimes you must load on one side, and sometimes on the other.

410. (*Major-General Dickson.*) Is there anything laid down in your practice or experiments with regard to the space to be allowed between the guns?—We have never worked two guns together except in a casemate, when they were 24 feet apart.

411. You have 32 feet in the model tower?—Yes; but that was for turn-tables. It depends upon the amount of training that you want. There is hardly any arc so small that does not give room for loading a gun.

412. (*Major-General Simmons.*) The plan before you shows Garrison Point Fort, and there is here, on the magazine story, a thickness of 16 feet of solid granite, do you think that affords sufficient protection against guns that might be fired from ships?—I should think it would be sufficient unless the ships were to concentrate their fire upon a particular point, but I do not think they could do much harm.

413. Have any experiments been made at Shoeburyness which you can quote, to test the penetrating power of shells into earth-work?—Only with the small shells; we have no means of firing live shells of a large kind there.

414. What penetration have you had with the heaviest shells you have fired?—At 70 yards, with charges equal to produce the same effect as the service charge at 400 yards, the 9-inch Palliser shot, weight 248 lbs., just penetrated, the point showing outside 23 feet of well-rammed earth, that had been made for several months. A 10-inch shell, weight 398 lbs., under the same conditions, penetrated the 23 feet, and ranged 300 yards beyond. The parapet should not be less than 30 feet at the crest.

415. You mean to resist the largest gun?—Yes.

416. (*Colonel Elwyn.*) That is deduced from experiments you have mentioned?—Yes.

417. (*Major-General Simmons.*) Would you consider 27 feet of made earth in a parapet, with a wall of 2 feet of masonry behind it, sufficient protection for a magazine, that wall being the wall of the expense magazine?—I think that a shell would destroy it, even the 9-inch shell, supposing that it only went a certain distance, and exploded.

418. If the earth was excavated, and 6 or 7 feet in thickness of concrete were substituted, would that stop a shell?—If in front it would have the advantage of bursting the shell there before it reached the earth (pointing to the plan). A better arrangement would be to have a moderately thick iron plate set up in the earthwork, so as to burst any common shell before it entered far.

419. (*Colonel Elwyn.*) What is the weight of the bursting charge?—The bursting charge is 18 lbs.

420. (*Major-General Simmons.*) Have you had any experience of the sized crater produced by the bursting of such a shell?—No; we have no real data to go upon.

421. In the plan before you of the Southsea Auxiliary Battery the merlons are shown with a breadth of about 27 feet; do you think that that would be sufficient, and that there would not be some risk of the shell, such as you have described, bursting in that merlon, and shutting up the fire from both the adjoining embrasures?—No; because a great deal of that would depend upon the direction in which it struck. As a general rule, the explosion would take place more upwards than sideways, and there would be less resistance in a vertical direction. If the crater were made in that direction (explaining), it would be opened very likely upwards here (pointing to the plan), before it closed the embrasure.

422. Do you consider that the arrangements by which this embrasure (pointing to the plan) is protected by the iron plate, which only extends 12 or 14 feet in width, and which leaves on either flank of it a thickness of 8 or 10 feet of earth for the protection of the gun and the detachment, is a satisfactory arrangement, considering that shells are burst by percussion fuses?—I certainly think that that is a weak point.

423. Do you not think that there would be very great risk of the gun, and the detachment, suffering very heavy losses from a shell passing through, and does it not present a favourable condition for the bursting of the shell?—Yes.

424. Would it be a more advantageous arrangement to have the guns mounted *en barbette*, with a thicker parapet than this, and would it not be more advantageous than the arrangement proposed in this plan, by which the gun detachment would be entirely under cover of the parapet, and

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the only man exposed would be the man who was actually loading the gun, supposing that the battery was not taken in flank?—Then the whole working of the gun would take place from below.

425. Yes, it would be mounted on a high traversing platform?—When guns are placed *en barbette* there is great risk; of course you expose your guns very much.

426. Is it much more exposed to direct fire than through an embrasure?—No, only by its own width, but the men are greatly exposed to rifle and field-gun fire.

427. The greater part of the carriage is below the level of the top of the parapet?—Yes.

428. (*President.*) Supposing measures are taken, by the use of concrete and iron, to protect the weak point, which has been pointed out on that plan, would you prefer to have the gun in an embrasure, or to have it *en barbette*?—It is very difficult to answer such a question without very great consideration; we have a very great prejudice against the *barbette* plan; whether it is prejudice only, or not, there is a very great dislike to it.

429. (*Major-General Simmons.*) In the experience of the American war the *barbette* guns were not shut up so very much in action?—No, and a plan of that sort is now under consideration which will remove many of the objections to *barbette* guns, by the gun dropping between each round.

430. As to the necessity for traverses between guns in casemated works, such as the fort at Sheerness, do you think it is desirable, looking at the possibility of a shell passing into an embrasure, that the casemates should be separated by traverses?—If done, I think that it had much better be done by a simple wall of iron, as taking up less space.

431. Should they be entirely open, or traverses at intervals of every two or three guns?—I fancy that in a fortress of that sort, there is no use in having traverses at all, except for the support of the roof, because the projectiles would never get inside it. There is no doubt that it would be an advantage if it could be done without taking up much space, in case of splinters.

432. Even a 6-inch splinter-proof would stop a great deal, would it not?—Yes, no doubt.

433. (*President.*) Would there not be some disadvantage in closing in the space, and preventing the smoke from clearing away?—I do not think that any great quantity of smoke comes inboard, unless the wind is blowing right in; we do not find that much smoke comes through the port.

434. Do you consider that a shell coming in to one of the embrasures, through a shield, and bursting, would probably do much harm to the detachment at the adjoining embrasure, or that the fragments from the shell wouldhave much effect in the adjoining places?—No; I do not think so. If it burst upon the plate, it would go almost straight forward. The danger would be only from the fragments striking, from either the gun carriage, or something of that sort, and being driven out. If the gun was traversed in that direction (explaining), when the shell burst, then the gun detachment would suffer very much, but not so if the shell came straight in.

435. (*Major-General Dickson.*) Some practical experiments have been tried with double shell at Shoeburyness, can you tell us what was the weight of the double shell from the 12-ton gun, and the charge of powder it contained?—There are no double common shell for the 12-ton gun, but we have for them experimental double Palliser shells, chilled iron, which have not yet been tried. They will hold about 13 lbs. There is a double common shell for the 7-inch; weight, 180 lbs.; bursting charge, 13 lbs.

436. (*Major-General Simmons.*) That is a double shell?—Yes.

437. With regard to earthworks, is it desirable in your opinion that traverses should be placed between each pair of guns in earthworks as a general rule?—Certainly.

438. Instead of having them in pairs, as they are shown in this plan, is it desirable to traverse each gun?—I should prefer it certainly.

439. That would give you a greater length of parapet, and enable you to distribute the guns a little more?—Yes.

440. (*Major-General Dickson.*) As to placing guns in a battery, do not you think it would be better in a battery of the kind under consideration to have half the number of guns. Taking into consideration the presumed weakness of the intervals between the guns, or the merlons opposed to very large shells, would it not be more advisable to increase the distance, and have a larger merlon between every two guns, reducing the power of the battery one-half, in order to secure the safety of the work itself?—I think it must depend almost entirely upon local circumstances. Unless there is a great necessity for putting many guns together, I prefer to see batteries with a very small number of guns. The greater the space between them, particularly against shells, the better. You divide the fire, and make the thing much more efficient, I think, in every way; while the probability of hitting works so arranged is lessened.

The witness withdrew.

(*Adjourned sine die.*)

Monday, 18th May, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel ELWYN, R.A.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Major-Gen. A. J. Taylor, R.A.
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Major-General ARTHUR JOSEPH TAYLOR, R.A. (Inspector-General of Artillery), examined.

441. (*President.*) The first subject to which we wish to call your attention is the arrangement in the new forts now being constructed, or already constructed, for the service of the guns and for the magazines. First, I will begin with the magazines. Have you examined any of the new forts

with regard to the magazine arrangements?—I should like to explain to the Committee exactly how I am circumstanced as to those new forts. When I first undertook the duties of Inspector-General of Artillery, reading my instructions carefully, I decided that it was distinctly a duty of mine not only to look into what was already in existence, but what was preparing for my arm, and with that view I visited all the works in progress in each district that I came to, and I made remarks upon them purely relating to artillery points. I received, however, in the second year of my inspectorship, from authority, instructions to discontinue remarks on works in progress, and have since abstained from visiting them, except in a most cursory way. My knowledge, therefore, of the artillery details of those works is comparatively small. I have been through Hurst Castle, because there we have a detachment, but in a very hasty way.

442. You have not been in Gilkicker?—Yes; when it was rising from the ground, but not since it has assumed anything like a complete shape.

443. You have not examined the arrangements there?—No.

444. Were the principal Artillery authorities consulted on any occasion with reference to the Artillery arrangements?—They were.

445. Did those arrangements include the position of the magazines, the powder, and the shell?—Yes.

446. So that you are cognisant of what passed on that occasion?—Yes; I was one of the officers. You have now asked me a question showing that an examination has already taken place as to that meeting, and I should like to give my account of it.

447. Have you any official cognisance of the arrangements made for the position of the service magazines in any of the new forts?—Yes; in Southsea Castle. May I be allowed to put, in a few words, my own view of the meeting just now referred to. I cannot now state the precise date. I received an order to attend a meeting composed as follows: the Director of Ordnance, myself (Inspector-General of Artillery), General Lefroy (President of the Ordnance Select Committee), and Colonel Gambier (Deputy Adjutant-General); General St. George (Director of Ordnance) was the President, and we met Colonel Jervois (Deputy Director of Works). It was in the Commander-in-Chief's Committee-room at the Horse Guards; and I there proposed to read a paper containing my views, rather hastily written perhaps, but still I was content to put it before the Committee as showing what I considered should be the common sense and natural relations between my arm and the sister corps in regard to all these preparations. The Committee decided, after some little consultation, on allowing this to be read. I read it, and Colonel Jervois then accepted it in full. He said, "I have not anything to say against that paper." I said, "Very well; that very much simplifies the matter, and we will now discuss the points." He then proposed that we should take a modern work as the basis for our discussion, and he suggested Southsea Castle. I said, "You could not take a better work, for I have very lately been there, and in my report to the Commander-in-Chief I have had great pleasure in testifying to the evident regard and care that have been there shown to artillery wants in the construction, you could not have picked out a better work." We then put a plan of these works on the table, and discussed those questions. I have seen no other plan of any modern work except such as have come before the Defence Committee, of which I am a member. One or two modifications were suggested by the Committee, and among others one by myself, namely, that the side-arm sheds should be placed, with a view to the possibility of an alarm, as close to the ramps leading to the terreplein as possible; that they should be so constructed that each gun should have its side-arms easily identified, and that even in the dark the men should be able to pick them up, and run up at once to their gun. That was fully acceded to by that Committee and Colonel Jervois; other points were settled also.

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448. That was in an earthwork battery. Have you considered the plans for casemated batteries?—I have not had what I consider to be the greatest advantage in forming an opinion of these things, that of examining them closely.

449. The plan before you is a plan of Gilkicker Fort. Will you look at it and give the Committee your opinion as to the magazine arrangements?—This (pointing to the plan) I presume is the eastern end of Gilkicker Fort, and the object of having the shell brought, as I see, the longest distance, and the powder brought up there (pointing to the plan) is to afford greater protection to the powder.

450. We were informed that the question of whether the powder or the shells should be brought up near the muzzle of the gun was discussed with the Artillery officers, and the conclusion arrived at was that the powder should be brought near the muzzle of the gun, and the shell brought to the rear. Is that your opinion?—I will tell you what occurred; it was completely a moot question to the last. There were two considerations, one was the weight of the shell which it was an object to avoid bringing a distance, and the other was the greater protection to be afforded to the powder if brought up close to the parapet. That matter was discussed, but it was so difficult to come to any decided conclusion without having more experience with the new weights, that I believed the Committee agreed to defer it until some practical trial could be made. I find, however, the other was the recorded decision, since changed in my absence.

451. As the magazines are arranged upon that plan for the powder to be brought through into one passage, with a door there (pointing to the plan), and the shells to come out here (pointing to the plan); you could not, I suppose, without great inconvenience, having once decided upon a plan, make any alteration?—No; nor do I consider it of such importance in this case as to make it worth while to do so.

452. Then I understand that you have no objection to that arrangement?—No, I have not; all that I think is wanted is that the right ammunition shall be quickly and safely got, and that there shall be no chance of getting the wrong ammunition in the heat of action, which would lead to a loss of time, because in such a case it must be sent back and changed; there should be also no chance of the men jostling together in going and coming away.

453. You see that the passages are entirely separate?—Yes; it is a very good arrangement indeed.

454. You also perceive that there is a passage in rear to afford a separate access to the light-

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boxes?—Yes, and I consider that that is a matter of great importance. That question was discussed by us on the occasion to which I have referred: that is, the necessity of looking thoroughly into the lighting of these places, because, as a matter of course, a loss of time must ensue if the men cannot see what they are doing, and properly protected lamp light was fully accepted by all.

455. Subject to any alterations in the details which practice and experience may suggest, you think that the arrangement shown upon that plan, as far as you are able to judge of it, is calculated to answer the purpose?—Yes, I think so.

456. You see also that the shell is to be brought from its place to the lift, which will carry it up to the level of the battery, and there deposit it upon a truck which moves upon wheels?—Yes.

457. Do you not think that it would be an advantage in a casemated battery to have the floor kept clear, and not cut up by any rails?—Yes, unquestionably I do; but my opinion is that you *must* have a countersunk rail, if it be necessary to bring up very heavy weights. I would not have raised rails, because the men would be tumbling over them while they were bringing the ammunition and working the gun.

458. (*Colonel Harness.*) If iron splinters fell into a countersunk railway, would not that be an objection to it?—Yes; but you must expect to have casualties; the splinters could be easily got out.

459. (*President.*) Have you considered a plan which has been proposed to be adopted for loading the guns by having a traveller over-head?—Yes; I have seen it worked, and it worked very well; but I do not think such an arrangement necessary, except for the very heavy 23-ton gun.

460. (*Major-General Simmons.*) Where have you seen it at work?—At Shoeburyness; it is now used there; they bring the projectile from the shell store to near the muzzle by lift and truck, then suspend it, and carry it round by a traveller to the point where they put it into the mouth of the gun, and they do that with a degree of speed that quite astonished me.

461. (*President.*) It has been stated that it is not intended to mount a heavier gun than the 18-ton gun in any of these casemates; do you think that any traveller would be required for such guns?—Of course I cannot answer that question positively, because I have not seen the experiment tried.

462. Do you think that a weight of 400 lbs. could be handled by men without using tackle?—No; it could not, certainly.

463. You have seen by the model how it is proposed to bring up the powder and the shell. Have you any observations to make as to the loading of a gun?—No; I think that the drill that I saw the other day at Shoeburyness was quite sufficient. There are minute details on which I made suggestions: one, the fitting of the shell in such a position before suspending, that when it reached the muzzle no time would be lost in fitting the studs to the grooves.

464. Do you think that there would be any difficulty in working those heavy guns in casemates, the shot and shell being brought conveniently to the muzzle of the gun?—No; there must be, of course, sufficient height in the casemate to allow of that suspensory process being used.

465. (*Major-General Simmons.*) Do you think that there will be no unnecessary delay in serving four guns from one lift?—That opens up another question, the time required for each round in the lift.

466. Bearing in mind that there are two guns on either side?—It is a very difficult question to answer without actual trial, but my own opinion is, that the fewer guns each means of supply is responsible for, the more continuous and sustained and the better the fire will be. In all the remarks that I have ever made upon these subjects, and particularly upon the subject of expense magazines, I have put down four guns as the number which my own experience tells me is the limit that you should call upon an expense magazine to serve. I see by the plan that there is one expense magazine for five guns, and if there are those five guns you may *make shift* to provide for them by one expense magazine by lift; but I should like to try it first.

467. According to the arrangements which have been just discussed, it would appear that it is intended to supply four guns from one lift. Is that number, in your opinion, excessive?—I would rather have three, because you are dealing with very large weights; and I think that the loss of a few seconds might be the loss of a shot that would be of very great value to you. This is a subject that I have had to think a good deal about, and I think that all the progress which has been lately made in the improvement of artillery has gone to increase the value of rapidity of action more than anything—more than protection, or anything else. I consider first blows much increased in value.

468. (*President.*) Would it not be very difficult, in a casemated battery of the construction referred to, with two tiers, to subdivide the magazines still further than they are now, which would be necessary if each supplied a lesser number of guns?—No doubt.

469. Therefore the arrangement is a kind of compromise?—Yes; that is the precise description of it. The great object is to get the supply as separate as you can, but you must do that under certain conditions.

470. (*Major-General Dickson.*) Would you recommend, in order to facilitate the commencement of action and the rapidity of fire, that any proportion of shot or shell should be placed in a convenient position close to the gun?—Decidedly, if you could do it safely.

471. Do you think that 10 or 12 shot or shell would be too large a proportion to have at the commencement of active operations?—I think fewer would suffice, but I look upon the responsibilities and duties connected with sea batteries as totally different from those connected with batteries inland. I look upon it that, under the growing conditions of modern artillery, every sea battery ought to be as nearly like a ship's deck as possible, so that you might go at once into action; and if you turned the men out of their beds, and they jumped into their trowsers only and ran into the battery, every man ought to be able to put his hand upon his side-arms, and go at once to his place at the gun. I have got that done. I have succeeded in getting, in all the garrisons, gun detachments told off permanently; and if a vacancy occurs it is immediately filled up. I have myself taken a brigade on parade, and sent them as for sudden alarm into action; and I have had all the guns manned at once. I think that common sense dictates the necessity for that in a sea battery, and that you ought not to have to wait one moment that can be saved.

472. (*President.*) I presume you mean that the arrangement should be something like that which is made on board a ship of war, so that when the order is given to clear for action, a certain number of shot are placed in rear of a gun ready for use?—Yes; I have often suggested, and His Royal Highness the Commander-in-Chief has, I think, fully accepted that there should be in our future drills two degrees of it—instructional drill, and the alarm—that the instructional drill should be carried out most carefully and rigidly in all its details, but that that should enable a man, when the alarm drill was required, at once to go to his work reliant on himself and comrades.

473. You are aware that on board ship different signals are used, and when the signal to clear for action is given, it means that the men are to go into action having everything ready to enable them to fire the guns as fast as they can at the enemy?—Yes.

474. That is the system that you wish to apply to land batteries on sea faces?—I would do it everywhere, but to those batteries most emphatically. I have likewise recommended the adoption of this plan, viz., that the captain of the gun, or number one, should be made responsible for his own shot, instead of having to get down, for another man to fire by his command when he, number one, can no longer see his object. I propose that he shall carry his own lanyard, and jump down and fire.

475. The next point which I wish to bring to your notice is the space required between the guns. Have you turned your attention much to that?—Yes; and I have found it to be a very difficult question to answer, because there are a number of data that we are in want of, and I think it is a very great pity that they have not been obtained before; one of them, peculiar to works of two tiers where the actual thickness of parapet is the shield, is shown in this model (pointing to that of Garrison Point, Sheerness). Here is one gun (pointing to the model) projecting through the shield, and here (pointing to the same) is another gun also projecting through the lower one. When the upper gun is loaded and run out, the lower one may have recoiled, and is being re-loaded, or *vice versâ*, and with only that vertical depth (pointing to the model) between the guns and the horizontal thickness of the shield, we do not know yet how much, in the way of concussion, a man at the other gun can stand. I know that among artillerymen there are many opinions entertained about it, on account of the tremendous concussion caused by these guns when fired.

476. The Committee have already received some evidence upon that point, and it has been suggested that the effect of any concussion to be felt between one port and the other would be lessened by the interposition of some contrivance in the shape of a fender between the upper and lower port?—No doubt that might be done, but it is difficult unless so built.

477. Do you think that there would be any difficulty in making such an arrangement as that?—I do think there will be in finished works. What I have felt all along has been that we have been working in the dark as to what men can stand when these heavy guns are fired. With regard to turrets, unless the turning of these is stopped at a point that experiments show will not allow the firing of the guns to injure the men in the other turret, I think you will have some accidents, and fire checked.

478. Have you witnessed any experiments which have been made upon that point in order to ascertain the effect produced?—No, I have not; but what they told me at Shoeburyness did not tend to lessen my anxiety on the subject.

479. From the evidence given, it appears that the idea is that it will be necessary to interpose something between the two ports in order to prevent the effect of concussion?—I am speaking now quite in the dark, but I think these things might be ascertained by experiment. There are others which I could mention.

480. I understand that some experiments have been made?—I think not, in the case of two tiers.

481. (*Colonel Harness.*) Does this objection, in your opinion, apply to all guns, or only to 22-ton guns?—Of course it applies very much more to those guns. When they tried it at Shoeburyness, it must be remembered that the two wooden half towers were open at the top, but when the gunner who stood near the port in the left tower when the right gun was fired—I cannot say exactly what the angle was, but I think it was 35° from the line joining the two ports—the gunner who stood there, when he was asked whether he could stand and load the gun while the other gun was being fired, expressed himself much to this effect: "Well, I can try it; I can do what I am told, but I would rather not."

482. What was the size of the gun in that case?—It was a 23-ton gun. You *must* have a point at which the traversing of a tower is checked within the limits of security if another is near it.

483. Would the same remark apply to the 18-ton guns?—Yes, certainly, and to the 12-ton guns.

484. Not below the 12-ton guns?—I may perhaps take a more serious view of it than other people, from having been a sufferer for some years from the effects of such a concussion.

485. (*President.*) Do you consider that there would be any risk of injury to the men at the adjoining embrasures, or any inconvenience in working the guns, where there is a space, as shown in model, of 24 feet from centre to centre of each gun?—In answer to the first part of that question, I would say No, and to the latter part the same, as long as you have room to work when the gun is traversed; you must give complete room for traversing the gun. There is another question: I do not exactly know what the arrangements are for traversing the guns—whether tackles would be used. If you use tackles, then you require perhaps a little more room.

486. Have you seen the plan which is adopted on board the "Excellent," and on board other ships where they use a winch and a chain?—No; but I can fancy that that might be very easily adopted. I think it is what we have wanted in our land batteries—a certain and uniform traverse, which will work readily and steadily, and not overshoot.

487. In the model, the guns are at a distance of 24 feet, giving a range of 70°?—Yes; but you must remember that in a battery like this, in which the gunner will have a certain amount of discretionary power, this gun (pointing to the model) may be firing at a vessel just quitting its range, while the next is beginning with another, and you will have the rears of two platforms inclining towards each other. If I were asked

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to plan a work for a certain number of guns, I would give a great deal more than 24 feet between the guns—a great deal more than there is in any of these works shown on the plan; for when you come to fire rapidly, take Hurst Castle as an example, with a swarm of ships coming in, and a heavy fire being opened upon it, I think it will be shut up completely, and that you will be firing entirely by chance on account of the smoke.

488. You would advocate, perhaps, smaller detached batteries?—I have never had any doubt about it, and where possible, at different levels.

489. Have you had any experience of the resisting power of granite piers in casemated batteries, such as that of which there is a model on the table?—Nothing more than the experiments at Shoeburyness. My opinion upon that point is this: a more magnificent piece of masonry, perhaps, was never seen; but I do not think that anybody could have seen that battery after it was fired at with heavy guns, without feeling that if exposed to a *continued* heavy fire, granite is an illusion; that is to say that granite, when it receives the impact of shot, although after the first two or three no great results are produced; a disintegration of the whole mass takes place in the interior, and as when a number of balls of equal weight are suspended in contact in one line, if one, two, or three be drawn away and allowed to swing again into contact, a corresponding number will leave the other end, so the shot which subsequently strikes the extreme of the granite sends away *its value* in splinters inside, which would make the place a hot berth.

490. And probably disable the gun detachment?—Yes; I think that if you looked to the result of that practice at Shoeburyness you would say, "Thank God I had nothing to do with the working of those guns."

491. (*Major-General Simmons.*) Was that result produced after several rounds had been fired, the shots striking very near to each other?—Yes, I do not say that they struck exactly on the same spot.

492. Did they strike so that you think that practice is likely to be repeated by shot fired from floating batteries?—I think very much less likely; but when you are talking about the protecting power and arrangements, I think you must look to extremes.

493. Was not the effect produced upon that granite work much the same as would be produced by breaching batteries on shore from which the shot were fired in succession, or one after the other and striking very nearly on the same spot?—No doubt it was so.

494. And therefore not much resembling what would take place in an action with ships firing from seaward?—No; but still the deterioration of the granite was very rapid, and the cracking through took place at a very early stage of the cannonade.

495. Did you witness any experiments against granite protected by iron?—We had some at Shoeburyness; but I do not think it was granite protected by iron in contact: that is to say, it was not dependent upon it, except in one experiment in which a plate of small thickness was backed in four different ways, granite being one, and the granite was cracked all to pieces.

496. Are you aware whether any experiment has been made to test the resisting power of a granite fort faced with thick iron against the heavy guns of the present day?—I do not think there have been any experiments made.

497. (*President.*) You were, I believe, some time at Shoeburyness?—Yes, for four years.

498. Had you an opportunity then of seeing iron fired at supported by different kinds of backing; and do you consider that a wood backing adds to the power of resistance in the structure generally?—I do not, I believe that all iron, if you can go to the expense of it, would offer a better resistance than with wood behind it, but then it would be a costly undertaking. The finest fort, according to my own notions, that I have seen, as regards material, is one that I went to see at Millwall, at Mr. Hughes's manufactory. He had been making it for the Russian Government; it is intended for Cronstadt, and he showed me a model of a casemate of it. That is, I think, a magnificent fort, and is all of iron, and every single bit of it is brought into its most useful bearing and position.

499. In that case, were precautions taken against the shearing of the bolts and the breaking of the bolts by concussion?—I do not think that he called my attention to any special scheme for preventing shearing of the bolts; that I consider must depend upon the construction of the bolts. I have my own views about that, and I have put them into shape.

500. Did not some experiments, made against an iron target at Shoeburyness, during the time that you were there, show that the concussion, when all iron was used, was so great as to destroy the inner skin, and shear the bolts and rivets to a much greater extent than when wood was employed?—I think that the wood backing in some degree numbed the effect of the fire. I stood behind one end of a target one day when they were firing a 68-pounder at the other, and several of the nuts were driven out.

501. Was that an iron target?—Yes, it was.

502. Perhaps you may remember that there were two targets constructed to test the advantage of all iron as compared with a different construction, one by Mr. Fairbairn and the other by Mr. Samuda?—Yes.

503. And the result of that was that they gave up the idea of abandoning wood backing in the construction of ships was not that so?—I always thought that the backing in ships was in some degree referable to the reluctance to give up wood as a portion of the ship: that is to say, I thought there was a clinging to the wood.

504. In the Report of the Iron Plate Committee of 1862 I find it is stated that the more rigid the backing the greater is the support to the plate; that, on the other hand, a soft backing has the advantage of yielding in some degree to the distortion of the plate, distributing the effect of a blow over a larger area, diminishing the damage to the general structure, and retaining the broken fragments in case of fracture?—Yes, I can perfectly understand that; but you must recollect that these experiments were tried with a description of plate very inferior to what they now introduce. They were plates of a thickness which enabled them to buckle to the shot, and they broke far more than the plates they are now introducing, consisting of 12 and 15 inches of solid iron.

505. The Committee go on to say, "For these reasons it is not desirable, as far as our experiments have yet shown, to construct any ships for

war purposes without a wood backing in rear of the iron plates." If it is necessary to interpose a wood backing for the protection of the iron skin in an iron ship, and put in without reference to the ship's construction, would not the same reasoning apply to an iron fort?—I think it would appear presumptuous in me, without any actual trial having taken place, to assert that it would or would not. My own belief is that when you have to deal with these enormously heavy projectiles, fired with very high velocities, the only way of meeting them is that of outbidding them in strength of iron, and in the supports given.

506. Have you formed any opinion as to the thickness of iron which it is necessary to put into a shield to enable it to resist an iron shot weighing 250 lbs., fired from a 12-ton or 9-inch gun?—I should rather hesitate to express any decided opinion about that, although I have my own views of it. I ought to have explained that the injury to my head has prevented my attending recent iron-plate trials entirely. Looking at the enormous results that I have seen from the 23-ton gun, when fired at a floating target, I should not consider myself safe from that fire. If I were building a fort to meet iron-clad ships furnished with 12-ton guns, I should say that you would certainly require 10 inches of iron. No doubt more iron is being used now, but it is in separate pieces, and I think that 10 inches of solid iron in one plate—finely forged solid iron—would guarantee you from the kind of injury that might be expected to be done by the fire of a ship moving along, but incapable of taking that minute and accurate aim that you can take on land.

507. (*Colonel Harness.*) Do you assume that there will be any backing behind those 10 inches of solid iron?—No backing, but there should be tremendous strutting.

508. Do you mean that the whole of the resisting surface is to be 10 inches of solid iron?—If you go on battering at a plate where it would be exposed to frequent impact near the same place, I do not think it would be sufficient; but keeping in view the enormous cost of it, I would undertake to defend a battery with 10 inches of iron against the number of shots that I should expect to strike it.

509. (*Major-General Simmons.*) With reference to an answer that you gave just now, do you think that the further experiments made subsequently to 1862, when the Iron Plate Committee reported and recommended wood-backing, would at all tend to modify the recommendation made as to the advisability of wood-backing to support the iron plates?—I do; I think that the result and the general feeling was rather increased confidence in the iron itself. Such is the impression that I have derived. There is one thing to be remembered in this description of battery (pointing to a plan), which is, that all the thickness you get is an interference with the traversing of your gun. I wish also to make one remark as to these shields (pointing to the plan), which has suggested itself to my mind in the course of my late tour of inspection, that in some of the works these shields are to be placed rather more advanced than in others. In the one at Staddon, for example, the shield is placed back there (describing upon the plan). At Stack Rock they will be much more advanced in the embrasure, and shot striking the sides of the embrasure will be unable to drive splinters into the port; but when the shield is put back, as at Staddon (pointing to the plan), if these corners were struck, you would have such a cloud of splinters go into that port (pointing to the plan) that you would have half the gun detachment knocked over.

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510. (*President.*) We will now, if you please, go to an earthwork battery. Have you examined Southsea Auxiliary Battery?—Yes.

511. Do you consider that the magazine arrangements in that battery are satisfactory?—Yes; there are two main magazines there, either of which may be blown up without involving a stoppage of the defence of the fort, and I regard that as one of the first things to look to. I see here (pointing to the model) "Expense Magazine," "Shell Store," and again "Expense Magazine," "Shell Store," *alternately*. It is plain, therefore, that no gun will have to send a long way for the ammunition; and not only will the risk be avoided of having the ammunition exploded—that is, some of these large charges while *en route*, which would be sufficient to blow away a whole gun detachment, but there will be less chance of the gun being stopped in action by a casualty, and probably the powder men being knocked over at a distance from the gun, and I think that that is of great importance. I see by this plan before me a provision made for a side-arm store, and that is one of the things that I proposed myself. I proposed to have side-arm stores as close to the foot of the ramp or stair as possible, as I explained before, so that the men in running to their gun would be able at once to take up their side-arms, and go to the gun, and where it can be managed, to have, at all events, not more than the side-arms of two guns on each shelf. I will give the Committee an instance of an experiment that I tried the other day with a brigade that was in very good order. I paraded them without telling them what I was going to do, and, taking my watch out of my pocket, I said, "Man the whole of your batteries as quickly as you can." They went away at the double, and I went to the nearest battery. They reached the side-arms shed in a minute and a half, and they were nine minutes and a half before they got one gun into action, neutralizing, therefore, all the advantage of their rapidity up to that point. The side-arms shed is put upon a staircase, and it is so placed that all the side-arms have to be brought out singly like this (pointing to the plan), and turned in a passage, and then they are handed to the men.

512. (*Major-General Simmons.*) Have you found that to be the case in any other batteries which have come under your notice in your tour of inspection?—I have found room for improvement frequently.

513. To what battery did you just now allude?—To the Spur Battery at Dover. The new works were in a very embryo state when I visited them. I suggested changes in some in this respect, at Isle of Grain among others.

514. (*Major-General Dickson.*) With reference to the serving of these guns (pointing to the plan), from the expense magazines, what would you be inclined to recommend—a tramway for the purpose of bringing the ammunition up from the main magazine to supply the expense magazine?—You do not supply the expense magazines if you can possibly help it when under fire; you may have to do it, but the great object of the expense magazine is to avoid having your main magazine open under fire as long as you can, and when there is a temporary lull, and you learn that the expense magazines are getting short, you take

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advantage of the moment and get the powder out to replenish them; of course a tramway and truck would help.

515. You must remember that the expense magazines contain only 25 rounds per gun in action, and you may calculate that you may want to supply them again, and, therefore, ought not provision to be made for that purpose?—Yes, no doubt, if you can make it, and there is nothing like subterranean communications and lifts. At Fort Albert, in the Isle of Alderney, one portion of it, although I do not think they have finished it yet, has a very good arrangement. There are 21 lifts in one face, all of which communicate with a passage down below, the only mistake, as I think, being that those 21 lifts will have to be supplied from the magazine at the end of that passage, which will cause a certain degree of crowding; but there are bomb-proof rooms, which in a time of war may at once be converted into expense magazines, and then there will be a fine safe supply for the battery. In the same fort, where this beautiful arrangement has been made for a portion of it, there is a main magazine, which is capable of holding 6,000 barrels, in which, when I was there, there were 4,064 barrels divided by a wooden partition in the centre, one-half of that magazine was in charge of the storekeeper, and the other of the officer commanding the artillery. The half in charge of the officer commanding the artillery is to furnish three batteries in action, and I want to know who *is* in charge of that magazine?

516. Do you consider that these expense magazines (pointing to the plan) are sufficient for serving four guns in an easy and efficient manner?—Reasonable proximity, security, and facility of access are the essentials of expense magazines, and four is the limit I would assign in the case of heavy guns.

517. (*President.*) I wish now to call your attention to the protection afforded by the arrangement of the parapet as shown in this plan, and I will first take the protection afforded to the magazine against shot coming in. Can you give the Committee any information as to the amount of earthwork which you think necessary to protect the magazine against the fire of the heavy guns of the present day?—We have no data whatever upon which to form an opinion. We tried with the guns that were the biggest in the service at the time when I went to Shoeburyness, and they also tried some experiments at Newhaven, and certain results were attained, but we have no data, at least I am not aware of any, as to the penetration of shells into earth from any of those very heavy guns.

518. Nor as to the effect of shells exploding in them?—No; and there is another thing which is germain to the question. We have no data as to the penetration of such shells into masonry.

519. Have you no data showing the effect produced upon stone or earthwork?—No; we have fired a 70-pounder shell at 750 yards through 7 feet of brickwork in an old Martello Tower, clear through; that was when the experiments were made with the Armstrong and Whitworth guns.

520. (*Colonel Harness.*) That was through brickwork, was it not?—Yes; not through stone masonry. The Armstrong and Whitworth Committee strongly urged that experiments should be tried, but the answer we received was that there was no piece of wall that they could give us to fire at. There is Castle Cornet, in Guernsey, and Mont Orgueil, in Jersey, where there are magnificent specimens of old masonry, but I do not contemplate trying those; but I think it is a great pity that we cannot try these experiments.

521. Is there no record of any accidental penetrations which have taken place when large guns have been fired?—No; and we have never had an opportunity of trying it, that I am aware of; we had not when I was at Shoeburyness.

522. You know, I presume, what distance the 100-pounder penetrated into earth?—Yes; it was 21 feet, but then it curved considerably. I may remark that all these rifled projectiles, when they bury themselves in earth, go away to the right, and it is a curious fact that when they were fired into concrete, we had to remove the concrete afterwards, and we found that the shells had turned clean round, the fuses pointing in the direction from which the guns had been fired.

523. (*Major-General Simmons.*) The bursting charges that are now placed inside shells are very much heavier than they used to be, are they not?—Yes, enormously.

524. They act, in fact, like small mines?—Yes; they do so completely.

525. Looking at the greater penetration of the projectiles, and the larger bursting charges which are placed inside shells, do you think that 30 feet of earth, supported by a 2-foot wall, affords sufficient protection for the magazine?—I think that they may afford sufficient protection to it against one or two shots, but I do not think that such a protection would stand any continuance of fire. but I consider that that is a point about which we are in the dark.

526. Do you think that sufficient protection would be afforded against a chance shot from one of the heaviest guns that might be fired on board ship?—Yes; but then that is my own impression. I have no data to go upon. I cannot venture to assert it.

527. (*President.*) There is evidently in all batteries with embrasures a weak point outside the shield, and at this point (pointing to the plan) a shell would only have to pass through 10 or 12 feet of earth to get inside. Do you consider that that that would afford sufficient protection for the gun detachment?—Speaking again in utter ignorance of the penetration of such shot, that does appear no doubt to be very weak. I may state to the Committee that I have recently asked separately a number of Artillery officers what, if they were suddenly asked what kind of battery they would prefer fighting, they would say; and with but few exceptions they put first a really shot-proof iron shield, and next a battery *en barbette* with a good thickness of parapet, and I will give the reasons for it.

528. (*Major-General Simmons.*) Have the goodness to state them?—They say that in a battery *en barbette* they run only half the chances of being hit that they do in an embrasure, for in the first case they must be hit by the shot itself, or by splinters, which must be driven up from below, whereas in an embrasure opposed to such artillery as you now will have to meet, the protection of the embrasure is illusory, for it is none whatever; and you may have large masses of the embrasure itself, driven in by the shot, in addition to the shot itself, which you can not stop.

529. (*Colonel Harness.*) By a battery *en barbette* do you mean a battery in which the gun is fired above the parapet, being placed upon a raised platform?—Yes, to a certain extent, raised by reasonably high platforms. I object *in toto* to the arrangements made in some of the coast bat-

teries, where the guns are placed upon platforms of such great height that it is quite a journey up and down.

530. Would you reduce the height of the parapet to diminish the height of the platforms?—I would reduce the height of the parapet to what would leave sufficient protection for the men from ordinary fire, and nothing more.

531. At what height would you fix that?—That would be a matter for trial, but I should say 6 feet, 7 feet at the outside.

532. What height would your traversing platform be for a 7-feet parapet?—There was a slide to the 12-ton gun at Shoeburyness the other day, it was easily stepped on and off, which I look upon as a great point, so that instead of the men having to climb up and to climb down, they can step on and off it; but they were firing through an embrasure shield, not a very high one nor a very low one; a platform must doubtless be higher.

533. Would there not be a very great difficulty in putting one of the large guns of the present day, such as a 9-inch or a 12-inch gun upon a raised platform?—That depends upon how high you raise it; the 23-ton gun is on a turn-table now.

534. (*President.*) Would not 7 feet of parapet require the traversing platform to be raised from 4 feet to 5 feet above the ground?—Yes; I suppose it would, above 4 feet.

535. (*Colonel Harness.*) You have not now in the service any approved service platforms fitted for firing large guns over a parapet 7 feet high?—No; I do not think we have. I merely express this opinion as to a battery *en barbette*, it has no reference at all to the management of the gun, which is a matter of detail, but purely to the risk run in a battery *en barbette*. You must be struck by the shot itself, because all the shots that miss you go over, whereas, if you are standing at a gun with the two cheeks of an embrasure alongside of you, a shot which would otherwise escape you *en barbette*, would knock you over with splinters, though the shot itself did not touch you. I wish merely to express, in quoting the opinion of those officers, that the comparative risk in the case of the battery *en barbette* is a thing that is overrated; that, in fact, there is now no protection against the increasing power of artillery but an iron shield—no actual protection.

536. (*Major-General Simmons.*) Having reference to that opinion which was expressed to you by Artillery officers, do you consider that the arrangements by which 12 feet of the embrasures are protected by iron gives you a sufficient iron shield for the protection of the gun?—That is to say, whether 12 feet in the centre, sufficient to stop the coming in of a hostile shot, ought to be sufficient to protect the detachment?

537. Would there not be left on either flank of the shield a weak portion in the merlon through which a shell might penetrate, and under the most favourable conditions for bursting?—I think that it is not sufficient to prevent the action of a shell, but a well-drilled detachment ought to keep themselves under cover to avoid the effect of *direct* fire.

538. Is it not a fact that a moderate thickness of earth presents one of the most favourable conditions for the bursting of shells with concussion fuses?—I do not know anything of foreign concussion fuses.

539. I mean our own fuses?—Pettman's fuse would explode, I believe, in 12 feet; but many changes have been made in them and their resistance.

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540. Supposing a shell passed through 10 or 12 feet of earth, would it not be likely to burst just as it came through, and cause the greatest destruction in the rear of the shield?—Unquestionably; it would not burst until it came very nearly through, as it would not have time—the division of time is so minute. You are aware probably that we fired at a distance of 1,300 yards through 2½ feet of brickwork with a 12-pounder shell, but it did not burst until it was well through, and the results were very formidable.

541. (*President.*) Unless you can protect that weak point of the merlon, as I understand you, you would prefer a battery *en barbette*?—It is a serious thing to say, but at the same time I feel strongly disposed to say so, as far as these heavy guns are concerned. I may add that, if you would guarantee me 12 feet in front, it is just a question of judgment and opinion. I should keep my detachment behind that work, and my gun would be safe from direct fire as long as that obstacle existed, or till hit in the muzzle; but supposing a shell came through on either side, as Major-General Simmons has suggested, that is a danger against which you have no protection.

542. Then, in fact, you would prefer that the shield should extend further into the merlon?—Yes; if you could do that I think that that would be a great thing, if you could carry it out to the extent of 4 feet more on either side, you would strengthen the centre of that thick merlon to receive the action of the shell.

543. This is a proposed addition made (pointing to a plan) of adding strength to the work by concrete?—No doubt it would fill up partially the weak space; but is a very nasty material to have a shell explode in, I imagine.

544.—I will now direct your attention to land forts. Have you inspected any of the forts on Portsdown Hill?—I went all over them the first time I went on my tour of inspection with Sir William Gordon, who very kindly explained everything to me; but the works were then merely in their infancy.

545. Have you at all studied the magazine arrangements in those forts?—They were in such a state of confusion at the time that I visited them that there was but little to be seen. I see no objection to that (pointing to a plan indicating the main magazine beneath the terreplein of the fort) nothing can be better; but what I do deprecate is the placing of magazines not underground or heavily traversed, and having the whole of the reserve ammunition together.

546. Have you considered what sized guns are likely to be brought against a fort on the land side?—Yes; certainly a land fort does not require so heavy an armament as a sea fort; I think that a 7-inch Armstrong gun ought to be able to do any work that would be required in a land fortress. Of course I cannot say what sized guns may be introduced; no doubt an enemy could bring larger guns if they chose; but the large guns carried by ships would be carried in expectation of meeting ironclad vessels of another country, and not with a view to being landed to attack land batteries.

547. (*Colonel Harness.*) When you mentioned the 110-pounder, did you refer to it as an armament?—Yes; I think the 7-inch gun, as it is now termed, would be sufficient as an armament to reply to any gun that might be brought

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against it on land. The enemy, of course, might bring a gun of any size; but I do not think that these very large guns will be used as regular siege-train guns.

548. However large the guns brought against you on the land side might be, you would not require, you think, a larger gun than the 110-pounder?—No; you would have very large bursting charges, and you would fire with extraordinary precision; and with a little care I know that you need not have any trouble about the vent-piece; it is a thing that requires care and watching, and nothing else; a few will fail from time to time.

549. (*President.*) I suppose that the 6½-ton 7-inch gun would be quite as heavy a gun as you would expect to meet?—Yes; and we should have no iron to fire at in land fighting.

550. Have you had any experience, in firing any of the heavy guns from embrasures, as to the effect of the explosion of the gun itself upon the embrasure?—No; we have had no embrasures to fire these from; but I have no doubt that they will tear the embrasures to pieces in a terrible way. I am very anxious indeed that an experiment should be tried with some material of the kamptulicon kind, such as was once much used for paving stables.

551. Is there any battery which you have lately inspected where an experiment could be tried of firing heavy guns? For example, at Southsea, could that battery be armed?—Southsea could be armed.

552. Are the embrasures now in a state for armament?—I think they are not quite ready; we have got none of those heavy guns mounted yet.

The witness withdrew.

(*Adjourned sine die.*)

Tuesday, 26th May, 1866.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel W. F. D. JERVOIS, C.B., R.E., further examined.

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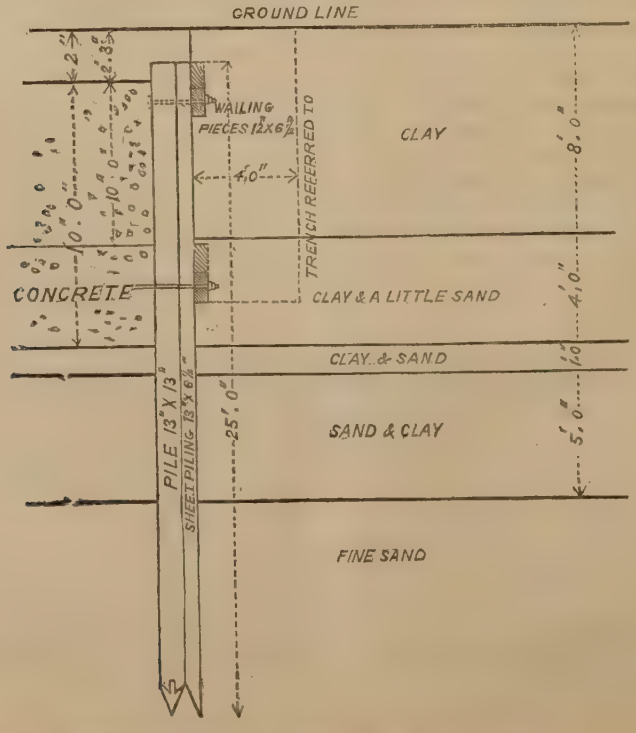
553. (*President.*) The Committee wish first to begin with the Hoo and Darnet Forts, and to get from you all the information you can give them as to the measures that were taken when those forts were first designed, to ascertain the nature of the subsoil, and to meet the difficulties you might expect to encounter in building forts in that situation. In what year were the first orders given as to those forts?—They were commenced in 1861; I have here the specification for the original contract for the foundations; it is dated 5th June, 1861.

554. (*Major-General Simmons.*) Are they both the same?—Yes: then there were borings taken previously, of which these are the sections (handing in the same).

(The following papers were handed in:—)

MEDWAY DEFENCES—BORINGS.

HOO FORT.



Section showing Strata of Ground. Scale 5 feet to an inch.

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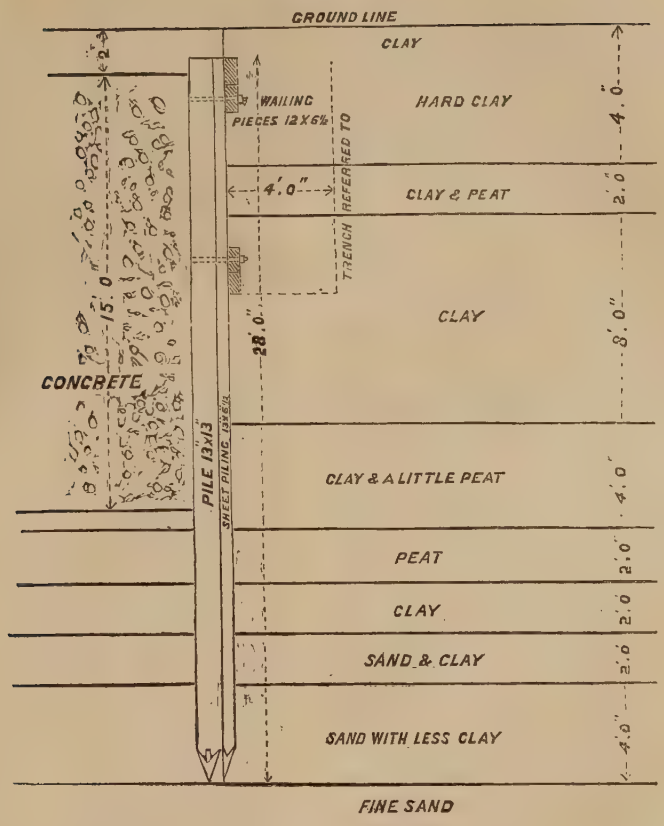
DARNET FORT.



Section showing Strata of Ground. Scale 5 feet to an inch.

555. By whom were those borings taken?—They were taken by the officer on the spot, Colonel Twiss, who was at that time the Commanding Engineer. The date of the contract, as signed by Mr. Myers, the contractor, was 11th of June, 1861.

556. (*President.*) Those borings appear to have gone down 28 feet, as given in the paper you have handed in, and then you came to fine sand?—Yes; the borings were taken before the works were commenced; these are the sections of the borings (handing in the same); subsequently there was a shaft sunk at Darnet. It appeared from the borings that there was a layer of peat two feet thick at a depth of 18 feet below the surface. From the shaft, it appeared that there was no peat below about 9 feet beneath the surface, and that at that level it was only about 4 inches thick. The foundations were taken 8 feet below this point.

557. Were the borings carried to any greater depth than 28 feet?—Not at that time; when we got down to the sand, we thought that was sufficient.

558. (*Major-General Simmons.*) Was more than one boring taken in each fort?—Yes. Three borings were taken at Hoo and two at Darnet.

559. I mean previously to the first contract being taken?—Yes.

560. At what period of the works was the shaft, to which you have alluded, sunk?—Very shortly after their commencement. It was found on taking out the stuff that it was more liquid than we had reason to expect, and we then determined on having a greater thickness of concrete put in than was originally intended, and to carry that concrete at Darnet Fort down to mean low water-mark.

561. (*President.*) What was the original thickness of the concrete?—The original thickness of the concrete was 8 feet.

562. What addition to that was proposed?—The addition that was made was 7 feet.

563. (*Major-General Simmons.*) For both?—No, at Darnet. We did not think it necessary to go down so much deeper at Hoo.

564. Did you add any thickness to the concrete at Hoo?—Yes, it was made 10 feet thick.

565. Have you got the sections of the shafts that you sunk?—Yes.

566. I mean the trial shafts to which you have alluded?—I have not got the section of the shaft by me, but I can furnish it. (See Answer 571.)

567. Did you find that the section of the ground, as ascertained by those trial shafts, was different from what you ascertained by the boring?—Somewhat different; it appeared worse in some respects; but, as I said before, it showed less thickness of peat than the borings did.

568. Did you try any borings after that in any other position in the forts, in order to ascertain whether the peat was more or less at other places?—I do not think it was considered necessary to try any further borings. There was enough to indicate the general measures that were necessary to get a very thick slab of concrete, which should give a general bearing over the marshy bottom.

569. (*President.*) You considered that the addition of 7 feet of concrete would meet the difficulty occasioned by the less firm nature of the sub-soil than you expected?—Yes. We also had 8 feet of Portland cement concrete instead of 4 feet, and 7 feet of Scott's cement concrete instead of 4 feet of Lias lime.

570. (*Major-General Simmons.*) Will you be good enough to send to the Committee the sec-

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tions that you obtained by those trial shafts?—I will. (See Answer 571.)

571. (*President.*) Did you consider it necessary to increase the diameter of the bed of concrete in consequence of what occurred?—No; we avoided increasing the diameter, owing to the piles being already driven, and not considering it necessary to incur the extra expense of the additional area. Here is a section of the shaft at Darnet (handing in and explaining the same).

572. (*Major-General Simmons.*) Was a shaft sunk at Hoo also?—No; we did not think it necessary because the stuff at Hoo was considered sufficiently good to lay the foundation on.

573. (*Major-General Dickson.*) Where about at Darnet was this shaft sunk?—Somewhere near the well, the well was there (pointing to a plan) and the shaft about here. I think it was about the centre where it was sunk, the well was sunk afterwards.

574. (*Colonel Harness.*) Do you not think that the shaft was made use of for the well?—I think not; it had no reference to it. The shaft was purely with reference to the nature of the stuff; the well was subsequently undertaken.

575. (*President.*) Do you remember when the well was sunk?—The well at Darnet was commenced in December 1863.

576. (*Major-General Simmons.*) Was the work carried out in accordance with the contract, or were there any deviations from it?—Yes, there were deviations, and extra concrete was used.

577. (*President.*) Will you explain to the Committee when any difficulties first arose in carrying out the original scheme. You started with the intention of putting in 8 feet of concrete, and in consequence of difficulties that arose there was an alteration of the plan?—It was about the month of November 1861.

578. Did those difficulties show themselves in the excavations or in getting a firm support for the piles, or in what way did they present themselves?—In the excavations.

579. Did the piles give way?—I think, if I remember rightly, that the stuff pitched out from the excavations to form the glacis somewhat pushed the piles inwards. Here is a section of one showing how it was so pressed inwards (handing in the same).

580. Was it in consequence of that that the trench was sunk?—No; it was in consequence generally of our finding the case more difficult to deal with than we anticipated.

581. Then this piling appears to have given way, according to this section, when you had only excavated 8 feet?—Yes.

582. Then the excavation appears to have been extended outside the piling, and was that done with the object of reducing the pressure and preventing its being forced in?—I think it was reduced to this dotted line (pointing to the section), with the view of taking off that pressure. With regard to the mode in which the concrete was put in, and other matters of detail, they were, of course, matters that the executive officer on the spot could alone speak of in detail. The general directions are contained in the specification.

583. Have you got anything to show the date at which the order to increase the depth was written?—The first order was on the 7th of October, to increase the depth of the concrete.

584. (*Mr. Hawkshaw.*) In what year was it?—In 1861.

585. (*President.*) It must have been very soon after the works were commenced, if the contract was only made in the beginning of June?—Certainly; it could only have been about three months after the work was commenced.

586. (*Colonel Harness.*) Was the increase ordered to both at the same time, or are you now only speaking of Darnet?—The first order to increase the concrete was given with reference to Hoo. I find, on referring to a memorandum that I have here, that at that time an order was given to make a shaft at Darnet. I went down to look at the work, and at that time I felt perfectly satisfied about Hoo; the difficulty was not very great there; but at Darnet there was more difficulty, and I thought it desirable to have further information with regard to the nature of the stuff with which we were dealing. It was at that time, or at the beginning of October, that the shaft was sunk, and the extra thickness that was applied at Darnet was not settled till after that shaft was sunk. We then obtained the sanction of the Secretary of State to carry the foundation at Darnet to a level of 17 feet below the surface. The concrete, however, was only laid to a depth of 15 feet; *i.e.*, to a level of 2 feet from the surface of the ground. There were 8 feet of Portland cement concrete, and 7 feet of Scott's cement concrete; it was at the recommendation of the Commanding Engineer, Colonel Twiss, that Scott's cement was used instead of Lias lime for the upper part of the concrete. Experiments made with Scott's cement led us to believe that it was preferable to Lias lime.

587. (*President.*) It is still your opinion that Scott's cement is preferable to Lias lime?—I think that if I were doing it over again I would rather adhere to Lias lime, but it was not the opinion of those who had made experiments to test the relative value of Lias lime concrete and Scott's cement concrete.

588. Was your attention called to any difficulty in getting the concrete to set from the percolation of water through the soil?—I do not recollect that it was until after the work was done.

589. Not during the time when the concrete was being put in?—No.

590. When was the first notice received by you of any cracking in the masonry?—In March, 1863, the Commanding Engineer, Colonel Twiss, was requested to report whether there was any sinking in the foundations, in order that the superstructure should be made to meet them, and the Commanding Engineer reported that there were no such sinkings—that was in March, 1863.

591. (*Colonel Harness.*) Was that with reference to one only, or to both?—It was with reference to both. Then, on the 17th July, 1863, he reports that "the upper layers of the concrete are not in good condition, but the lower, the Portland cement, is quite hard." That I believe was the first time that we heard of the concrete not being perfectly sound, and that was after the basements had been commenced.

592. Had the whole of the concrete been put in in the month of July?—Yes; it was in then.

593. (*Major-General Simmons.*) Was there any masonry whatever on the concrete at the time when the Commanding Engineer reported in March, 1863?—None.

594. It was merely the concrete itself to the full thickness?—Yes.

595. (*President.*) Do you remember when the masonry was begun?—It was begun in the quarter

between the 30th of June and the 30th September, 1863. Then on the 31st March, 1864, it is reported at Hoo Fort, "that the average height of the stonework was 11 feet from the concrete. The brickwork was at the level of the springing of the arches, and half the brickwork in arches over the casemates of the basement was finished." Then on the 16th April, 1864, the Commanding Engineer reports cracks in the masonry at Hoo Fort, but none in the concrete.

596. Does not it appear that the erection of the basement story continued through the quarter ending the 30th June?—Yes.

597. And the crack had shown itself in the month of April?—Yes.

598. Had there been no further reports of that crack increasing?—I think not at Hoo. I never felt the least difficulty in my own mind in dealing with Hoo, but I did feel a difficulty in dealing with Darnet. We were told by some persons that it was slipping into the river, and that it was all going down bodily. Many people had very exaggerated ideas as to the difficulties, but after carefully thinking them over, it appeared to me that they could be easily met, and only required watching to see what the tendency was, and that we should deal with them accordingly by equalizing the weight over the foundations, and giving an equal downward pressure as much as possible.

599. (*Major-General Simmons.*) When you received those exaggerated reports, did you order careful levels to be taken by the officers on the spot?—The levels were most elaborately taken at stated periods, and reported.

600. What was the result. Have you a copy of those levels?—The result generally was that after weighting the inner court of the work by means of ballast, in order to counteract the tendency of certain parts to settle unequally, the work was placed in a state of equilibrium, and the cracks stopped.

601. To what extent had the mass sunk into the marsh?—It is questionable whether it sunk at all.

602. When the Committee were on the spot the other day, various statements were made as to amount of settlement that had taken place, and it is desirable that the Committee should be informed what the actual amount of the subsidence was?—The concrete foundations having been deposited in layers, and having been completed to the intended level, it is impossible to say what alteration (if any) took place during the progress of its construction. In the interval between its completion and the commencement of the basement, I am not aware that any subsidence took place.

603. (*President.*) Can you also furnish the Committee with a statement of the levels that were taken?—Certainly I will furnish it. When I found that there was a difficulty to deal with, I let the work alone for some years, to see whether the measures that had been taken had met the difficulties, and being perfectly satisfied that they had met the difficulties, I adopted the same principle in preparing a design for the superstructure.

604. (*Major-General Simmons.*) Were any other remedial measures taken?—I do not think there were any.

605. (*President.*) When was the order given to stop the work?—We never gave an order to stop the work.

606. Have you any statement of the levels taken at any time?—I have a table of the levels to illustrate the depressions which have taken place at Hoo and at Darnet (handing in the same), and the date of this return is the 5th December, 1865.

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607. (*Major-General Simmons.*) By whom was that return made?—It is signed by Lieutenant Hogg, the officer in charge of the work at the time; it is also signed by Colonel Moody, the Commanding Engineer, and it appears that the average depression at Hoo since October 1864 was ·179 of a foot.

608. In what period was that?—In a period of 15 months, between October 10th, 1864, and December 5th, 1865.

609. What was the depression previous to October 1864?—The return by me does not give any information previous to that date.

610. Was there any depression previously to October 1864?—None, that I am aware of.

611. Are there any means of making a comparison with any levels that were taken previously to the commencement of the work, so as to ascertain the amount of subsidence which took place before October 1864, at which date that return commences?—The local officers can best give this information. I understand that there was some slight indication of change of level, but *so* slight that it was not considered to be of any consequence.

612. (*Colonel Harness.*) You have given us the average depression; do you remember what the greatest and the least depressions were?—The greatest was ·265 of a foot, and the least was ·1.

613. (*President.*) Did the first contract extend beyond the building of the basement stories?—The first contract did not extend beyond the laying of the concrete foundations.

614. Then was it under the second contract that the basement stories were built?—Yes, under the second contract.

615. Did that second contract include anything further?—Nothing but the basement.

616. And that was completed?—Yes.

617. Having been completed, and this subsidence having shown itself, you then put in the ballast, and did not proceed with any further contracts till you saw the result of that mode of treatment?—Exactly.

618. (*Major-General Simmons.*) What was the nature of the approved design in June 1861, when the first contract was let; was it represented by the plan we have had before us?—The foundations were designed, to take a circular casemated tower. In the original general design, there was a casemated building crossing the centre of the work, the intention of it partly being to weight the centre of the foundations. In drawing out a plan of the basement afterwards, this object was lost sight of, and there was a greater weight at one part than at another; there was also an open gateway in another part; hence this indication of a settlement at three points.

619. As the first contract for foundations must have been made with reference to some work to stand upon them, what was the design for that work, and the intention?—The intention was to construct a tower as nearly like the original design as, after the construction of the basement, the foundations were found to be capable of sustaining.

620. Are the Committee to understand that there was no approved design for the work in existence at the time when that contract was

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made? — There was, as I have already stated, an original approved design for a circular casemated tower, but doubts arose in my mind whether we should be able fully to carry it out. The Committee will understand that a design may be generally approved, though working drawings may not be prepared for carrying out the engineering structure.

621. Was the design merely in a state of sketch, and not completed as an engineering structure at that time?—It was a general design, and not drawn out in detail as an engineering structure.

622. In fact the foundations were laid out with reference to some possible work which might be put upon them?—No; they were laid out to take a circular casemated tower.

623. Was there, in 1861, a plan that had been submitted and approved by the Defence Committee?—Here it is (handing in the same).

624. (*President.*) The original plan, as approved by the Defence Committee, was for a circular fort having two tiers of casemated guns?—Yes; two tiers of casemated guns and a magazine across the centre.

625. The foundations were constructed with reference to that plan, but subject to alteration as the work proceeded?—The concrete foundations were originally constructed with reference to that plan. Subsequently I submitted another plan to the Defence Committee in lieu of this one, and the plan which is now being carried out at Hoo Fort was approved by the Defence Committee in lieu of this.

626. (*Major-General Simmons.*) Has there been no intermediate design between the original one before us and that on which the work is now about to be completed?—There was an intermediate design laid before the Defence Committee for a work for three turrets, but ultimately the plan now being carried out was determined upon.

627. (*President.*) Do you consider that if the foundations had turned out to be good and satisfactory, this design would have been adhered to?—Taking into consideration the position of the works and the greatly increased power of ordnance since 1861, in my opinion it would not have been advisable in this case to adhere to the plan for two tiers of casemates shown in the original design.

628. Was the modification of the design entirely owing to the insufficiency of the foundations?—No, both the foundations and the question of expense influenced the change; owing to the increased cost of the foundations, the estimate contained in the Schedule would not have sufficed for a two-tiered work. The points I have just referred to, as regards the position of the work and the greatly increased power of guns, also greatly affected the question.

629. We have now traced the history of the fort up to the cracking of the masonry, and taken you to the remedy of it, and suspension of any further work upon it?—Yes.

630. When were the works re-commenced upon the approved plan now before us?—This last approved plan was commenced in November 1867.

631. (*Colonel Elwyn.*) This is not the plan (pointing to the same) that they were carrying out when the wall cracked, is it?—This is the plan of the basement when the wall cracked.

632. It was exactly like that, was it?—Yes.

633. Then there is a third plan, is there not?—Yes; there is the plan now being carried out.

634. (*President.*) That is not the plan (pointing to the original design which had been approved by the Defence Committee), as I understand, upon which the contract was founded?—No; this is the plan of the basement upon which the contract was founded.

635. (*Colonel Elwyn.*) Does that agree with this (pointing to the original)?—That is not the same. This is the plan (pointing to the original design), that has a magazine across the centre of the work, and this (pointing to the same) has not.

636. (*President.*) One shows more detail than the other?—Yes; in the plan, as executed, the magazines are put under the battery, instead of being put across the centre of the work.

637. (*Major-General Simmons.*) Was this alteramon in detail submitted to the Defence Committee?—No; that Committee, which is a mixed body consisting of officers of the different branches of the service, under the Presidency of His Royal Highness the Commander-in-Chief, is not supposed, that I am aware of, to go into details of construction of works.

638. Who would have to look to it?—The Engineer, *i.e.*, the Director of Works in the War Office.

639. Surely the change in the position of a large magazine, transferring it from the centre of a work to the casemates below, is a large detail to leave to the constructional department?—That is part of the general principle of putting the magazines in casemated works in basements underneath the gun-casemates, so as to get the ammunition more readily to the guns, instead of having it in a separate building.

640. According to this design as approved, it appears that the fort was intended to be a two-tiered casemated masonry fort with iron shields and without a glacis?—It was always proposed to have a glacis. There is a glacis shown on the plan.

641. (*Major-General Dickson.*) I wish to ask you whether all the necessary borings were made to ascertain the nature of the soil, before any design of the intended work was made?—I have already stated that borings were taken before the design was made.

642. One boring?—Three borings at Hoo, and two borings at Darnet.

643. (*President.*) This is the plan (pointing to the same) that is now approved?—Yes, upon which we are now working.

644. (*Major-General Simmons.*) Can you give the date when the original plan was approved by the Defence Committee?—February 1861.

645. (*President.*) These are intended to carry 18-ton guns, are they not?—They could take 18-ton guns, but I should think 12-ton guns would suffice.

646. Was it contemplated when the original designs were made to mount guns of that weight in those forts?—Certainly not; guns of this weight did not then exist.

647. Do you remember what the idea was as to what the armament of those forts would be?—We could not have had any idea at that time of any guns of greater weight than 68-pounders.

648. (*Major-General Simmons.*) At what date was the modified plan approved by the Defence Committee?—It was in the beginning of 1867.

649. Is that the modified plan which you now propose?—Yes.

650. Was that made in 1866?—Yes; either in 1866 or the beginning of 1867.

651. When was it approved by the Defence

Committee?—On reference, I find it was in February 1867.

652. Can you place before the Committee the last general idea that was approved by the Defence Committee?—This (pointing to the plan) shows the detail embodying the general idea approved by the Defence Committee.

653. When was this contract let, and what was the amount of it?—On the 8th October, 1867. The amount was 23,035*l.*

654. Does that contract include the work that is necessary to finish the fort?—It includes all the works except the fitments; it does not include the iron shields and the appurtenances belonging thereto; they are provided for in a separate item.

655. Are the estimates yet framed for the fitments and the iron shields?—We have the estimate for the fitments.

656. And for the iron shields?—We have got the sum in a schedule in the Fortifications Act for the shields, but it is not specifically appropriated. We are now making experiments with a view to determining of what precise construction the shield we shall use shall be.

657. (*President.*) Then you cannot yet form any accurate estimate of what the cost of the shields for this particular fort would be?—Not at present.

658. (*Major-General Simmons.*) Can you give the Committee an estimate of what the completion of the fort will cost exclusive of the shields?—Certainly.

659. Is it all let by contract, except the interior fitments?—Yes.

660. Is there an estimate?—Yes.

661. (*Mr. Hawkshaw.*) And of the shields?—The shields are entirely a separate item. The interior fitments are included in the estimate that I laid before the Committee the other day.

662. (*Major-General Simmons.*) The battery has been designed for an armament of 11 guns?—Yes, eleven 12-ton guns. You might place 18-ton guns in the casemates if it were thought advisable to do so.

663. The magazine arrangements, I presume, would be much the same as those which you explained in your previous evidence?—Yes, they would be on the same principle as those I explained the other day. With regard to the first and the last design approved, I wish to remark that, taking in each instance the guns to be covered with iron shields, the former, if armed with the 68-pounder guns of that day, would have thrown about 1,700 lbs. weight of metal, whereas, according to the design now being carried out, it would throw at least 2,700 lbs. at one discharge.

664. Surely in 1861 it was contemplated to use rifled guns?—We knew then of no rifled gun but the 100-pounder, and this would not have been chosen for the armament of Hoo and Darnet in preference to the 68-pounder smooth-bore.

665. (*President.*) You have stated that you never had any doubt in your own mind as to being able to construct the Hoo Fort, but that you had great doubts as to Darnet Fort?—I had doubts for a certain time as regards Darnet Fort.

666. The failure of the foundations in Darnet Fort were greater than in Hoo?—There was more indication of failure.

667. The cracks were more serious?—They were rather greater in Darnet Fort than at Hoo. The foundation generally was, as I said before, not so good.

668. If you have the reports of the progress made and the dates when the cracks showed themselves, will you have the goodness to state to the Committee how the work went on at Darnet, and when the cracks showed themselves there?—The Commanding Engineer reported at first upon the 27th April, 1864.

669. What was the state of the work on the 31st of March, 1864?—"The average height of the stonework was 8 feet 9 inches from the concrete brick-work to springing level; a quarter of the brick-work in arches was finished."

670. The work proceeded, as I understand, during the quarter ending 30th of June?—Yes, in 1864. The first report of the local officers, the Commanding Engineer, and the executive officer on the spot, was that the cracks were attributable to a certain drain-pipe, as shown here (pointing to a plan).

671. Did they attribute the cracks to a weakness caused by the drain-pipes?—They did.

672. In consequence of that, what measures were adopted at Darnet Fort?—They were told to stop the drain-pipes up.

673. Was any alteration made in the construction of the masonry in consequence of that?—The masonry was held together by strong iron cramps: that is, the upper courses of the masonry.

674. (*Colonel Harness.*) Why did the officers suppose that the drain-pipes caused the crack?—Here is a sketch that shows that (handing in the same).

675. Was the crack in every case over the drain-pipe?—There is the settlement shown in this report, and it is shown over the drain-pipe.

676. Were the same measures adopted for equalizing the weight at Darnet as at Hoo?—Yes.

677. Were there not some other measures taken as to keeping the masonry tight?—There were, at Darnet, by using iron ties.

678. Do you know when that was ordered to be done?—It was on the 11th of May, 1864.

679. (*Major-General Simmons.*) Can you state the size of those iron bands?—Not at this moment; but they were very strong.

680. (*President.*) It appears from the progress reports that the contract for the basement stories was completed before the 31st December, 1864; that the works were laden with ballast, and that tha iron-work you have alluded to was fixed; was anything done after that, or were the works then left in the state in which they were on the 31st December, 1864, or has anything more been done to Darnet Fort since that time?—Nothing.

681. Were any levels taken at Darnet Fort and at Hoo Fort to ascertain the amount of subsidence which had taken place?—Yes.

682. Have you a statement of those levels that you can hand in?—The table that I handed in just now was for both forts.

683. What was the greatest depression at Darnet?—The greatest depression there was ·455 of a foot.

684. And the least?—·28 of a foot.

685. Were levels taken at different periods between December, 1864, and the present time?—Yes.

686. Since 1865 have any levels been taken?—Not between December 1865 and the date when the present work was commenced in 1867.

687. Have any levels been taken since September 1865 in order to ascertain whether any further subsidence had taken place?—Levels were taken

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at the commencement of the present contract, but no report was made to the effect that any subsidence had taken place as regarded the structures generally.

688. (*Major-General Simmons.*) And if so just state what they were?—The levels taken showed the greatest deviation from the horizontal line to be 1·92 inches at Darnet, and 2·64 inches at Hoo.

689. With respect to Darnet Fort, is there any record of the depressions which took place previously to September, 1864?—I have already stated that the depressions were reported to be so slight as to be of no consequence. This report, which I have before me, commences not long after the present crack was first seen.

690. Were there any records of a subsidence having taken place previously to October, 1864?—Not that I am aware of.

The witness withdrew.

Lieut.-Colonel E. Wolstenholme Ward, R.E., examined.

Lieut.-Col. E. Wolstenholme Ward, R.E.

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691. (*President.*) Will you be good enough to give the Committee any information you have been able to obtain with reference to the first works that were undertaken for the construction of Hoo and Darnet Forts?—Acting upon a letter which I received from the Secretary of the Committee, I have been making enquiries, and I think I have got most of the information I have been asked to obtain. There is only one point upon which I am not sufficiently informed, and that is with respect to the commencement of the settlement and movements which have taken place, and how the levels have altered. I believe that on the other three points I am able to give the Committee satisfactory information. The Secretary has called upon me for a statement of all the borings made on or about the sites of the works at Darnet and Hoo, previously to, or during their construction. This paper shows the section taken during the well-boring at Hoo, and this the section taken during the well-boring at Darnet (handing in the same). This is all I can trace in the records in the office. Some time previous to this, however, that is, on January 17th, 1861, the Inspector-General of Fortifications ordered the Commanding Engineer to obtain borings of the strata at Hoo and at Darnet. The bill paying for these borings was passed out of the district office on the 21st March, amounting to 42*l.* 3*s.* 6*d.*

692. When did the Inspector-General call for those borings?—On the 17th January, 1861, and the Bill passed out of the district office on the 21st March, 1861, in favour of the then contractors. So that the borings were made by some one under the orders of the Commanding Royal Engineer, but I cannot trace any report of what they were. Perhaps they were not considered of sufficient importance to keep a record of them, but I think the Committee can obtain the information they require from what was done at a later date when the wells at these forts were bored. Again, on the 31st of October, 1861, a shaft was sunk to a depth of 28 feet from the surface at Darnet, and the strata in that shaft were accurately recorded. These records will give the Committee all the information I can supply as to the strata.

693. Is this all the information you have been able to get as to the borings?—Yes.

694. With regard to the levels, have you ascertained anything?—There is a great deal of correspondence about the levels in the records of the office, but they all refer to a plan in December 1864, which was sent to the Director of Works. I made an attempt, yesterday and this morning, to understand these records, without the plan, but I was unable to do so. Therefore, if the Committee would give me leave to get the plan first, I would another day give them more precise information. I cannot at present understand the correspondence without the plan. I have on record the reports of Mr. Atwool, the Surveyor to the War Office; of Mr. Sands, who is also a Surveyor there; and of the officers who were engaged upon the spot—in which will be found their views of the cause and direction of the settlements. First of all, there is Mr. Atwool's report on the cracks at Hoo and Darnet, on the 30th of August, 1864. I may mention that Mr. Atwool has been sent down more than once to examine the difficulty, and to suggest to the War Office how to overcome it. Mr. Sands acted in a similar capacity. This memorandum which I am about to read comes from the War Department; it was addressed to Colonel Jervois, dated 30th August, 1864; and forwarded to the Commanding Royal Engineer of the district, in War Office letter dated the 31st. (The memorandum was read and handed in.) Then Lieutenant Hogg, who was in charge of the fort, on the 6th of September, 1864, made a report, in which his views are stated; it gives another view of the matter, which was adopted by him also from personal observation. He illustrates his view by diagrams, and states it in these terms. (The same was read and handed in.) Mr. Sands also put on paper his views; he was the other War Office Surveyor who was sent down specially by the War Office to look at the work, and his memorandum is dated 14th September, 1864; it is addressed to Major Leahy. (The same was read and handed in.) This is the best information I can give the Committee at present.

695. (*Major-General Simmons.*) Who was Commanding Engineer at the time these reports were made?—Colonel Moody.

696. Does he appear to have given in any report as to the causes of what had taken place?—The general course has been that Lieutenant Hogg has reported, and that Colonel Moody has sent the report on to the War Office.

697. Then he did not make any report of his own?—No; not generally. The Commanding Royal Engineer forwarded a report in which Lieutenant Hogg proposed an iron band, with tie rods, and that afterwards was adopted.

698. Has that arrangement been carried out at Darnet?—Yes, but there is nothing of the kind done in Hoo.

699. (*President.*) What is the date of the proposal?—Lieutenant Hogg's letter is dated 14th September, 1864. It was sent forward and approved of, with some little minor alterations; then an order came down on the 24th September, 1864, to the Commanding Engineer to carry out Mr. Atwool's suggestion.

700. That was to raise the glacis immediately, and to put a weight within, was it not?—Yes; with the view to equalize the pressure. Then further cracks at Hoo were reported by Lieutenant

Hogg on the 3rd October, 1864, and he suggested that an iron band should be applied there; but that recommendation does not seem to have been adopted. Then another belt and more ties were proposed for Darnet on the 11th of October, 1864—another set of ties to go higher up the fort—but that was not approved of. Fearing that the lower band might not act as was expected, it was proposed to have further bands to go up to a height of 7 or 8 feet. At this time the first proposed band was in, but the ties were not.

701. There had not been time, had there, to test the operation of that first band?—No, but there was some apprehension that it would not be sufficient. There is a great deal more correspondence, but I think what I have read shows pretty well the views that were entertained. This is all the information I am able to furnish to the Committee on the second point.

702. (*Major-General Simmons.*) At what period was the glacis raised to its full height?—It was completed in April 1865.

703. Were there not careful levels taken during the construction of that glacis?—Yes.

704. Have you a record of those levels in your office, and will you supply them?—They shall be supplied.

705. Has there not been some dispute with a contractor as to a payment, for the determination of which dispute those levels became very important?—Yes. That dispute arose in this way: the glacis had to be made up to an agreed height, and the contractor argued that as he piled up the filling, the mud below, or the natural surface of the marsh, sank, and that he was thus compelled to do more work than he would be paid for. Then, to check the contractor's claim on this account, some boards were placed on the original soil, and stakes attached to them, by which was shown the depth of soil placed on the glacis. Those, I think, are the levels you are speaking of.

706. Have you got those levels?—Yes.

707. (*President.*) Do those levels show the depression of the surface of the mud?—Yes.

708. As weight was added to the glacis, did it go down?—Yes.

709. Have you a record of the extent of that depression?—Yes.

710. (*Major-General Simmons.*) Was that depression considerable?—I cannot tell you what it was, but there was a good deal of it.

711. Do you remember what the maximum depression of the mud was?—About 12 or 14 inches.

712. Were those measurements taken by an Engineer officer, or by Mr. Sands?—They were actually measured by an Engineer officer, but accepted after examination by Mr. Sands.

713. I want to get at the fact as to who took the levels?—Lieutenant English took the levels from time to time, and made his record.

714. Then it was upon his record that the payments would be made?—Yes.

715. Were those levels taken with reference to any fixed point?—Yes.

716. Are those levels referred to any permanent datum irrespectively of the fort?—Yes; to an independent bench mark.

717. Are there any means of referring those levels to any permanent datum irrespectively of the fort?—The bench mark at Darnet exists, but not at Hoo.

718. (*President.*) Now we will go to the next point?—That is,—an estimate of the probable amounts necessary to complete the work according to the design as now approved.

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719. What design have you before you?—I have a design for the completion of the fort at Hoo. This (pointing to the same) is the design, and I assume the fort at Darnet is to be the same, and it is upon that understanding that the estimate I now hand in has been prepared.

720. (*Major-General Simmons.*) Have any levels been taken round the fort at the level of the top of the footings?—No.

721. Can you get such a set of levels taken?—Yes. (It was handed in.)

722. Can you inform the Committee how much money has been spent up to the present time separately on the Hoo and Darnet Forts?—Yes; up to the present time the amount spent on Hoo and Darnet, including "extra staff, travelling expenses, and all miscellaneous items," has been about 80,220*l.*

723. Do you mean on the two forts together?—Yes; that is up to the commencement of the last contract. Leaving out "extra staff, travelling expenses, and all miscellaneous items," the cost of the two forts up to the commencement of the last contract, was 76,992*l.*

724. But what you have deducted must also be paid?—Yes.

725. Then the amount will remain 80,220*l.*?—This amount includes a small expenditure for eastern defences, not connected with Hoo and Darnet.

726. What was the date of the present contract?—The 4th November, 1867.

727. When did you receive the first notice of that contract?—On the 13th November, 1867.

728. Were the plans ever submitted to you before the works were commenced?—No; that is the date of the first information that I received.

729. The first information that you received of a design being under consideration for re-modelling these forts was a notice that a contract had been accepted to the amount of 23,000*l.* on the 13th November, 1867?—Yes; that was the first information that I got that there was anything at all to be done to the forts. I was told that the tender of Messrs. Henry Lee & Sons, for the completion of Fort Hoo, had been accepted; and I was requested to give the necessary instructions for the execution of the work.

730. Had you seen the plans at that time?—No; I therefore requested to be informed what works were to be executed, and to be furnished with the plans.

731. Is that contract now being carried out exactly in accordance with it, or have there been any varations in that contract?—There have been some variations made. The Commanding Engineer must make some variations when he finds that things not arranged for are necessary, and other things are not necessary which have been arranged for.

732. (*President.*) Does it include the fitments?—No; it does not include the asphalte work, nor carpenters' nor joiners' work, nor does it include the shields.

733. (*Major-General Simmons.*) Not the interior fitments?—No.

734. Does it include the carpenter's work and the floors?—No.

735. (*Mr. Hawkshaw.*) Up to what time was the 80,220*l.* expended?—There have been three contracts—one for the foundation, one for the basement, and the third contract for the glacis

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and sea wall; and this sum of 80,220*l.* is the sum that was expended upon these contracts, that is, to finish the work as the Committee saw Darnet Fort finished.

736. (*President.*) That was all the money expended up to the time of making that new contract?—Yes.

737. (*Major-General Dickson.*) Have you expended 80,220*l.* without including the 23,000*l.*?—Yes.

738. (*Mr. Hawkshaw.*) As I understand you, the 80,220*l.* is the money that was expended upon both forts?—Yes; and the 23,035*l.* is for the completion of Hoo Fort under the present contract. Then we shall want for the completion of the fort, exclusively of the shields, about 6,653*l.*, making a total of 29,688*l.*, or say, in round numbers, 30,000*l.*

739. (*Major-General Simmons.*) Does that include the interior fittings?—Yes, I believe, everything except the shields and armament; the 30,000*l.* will include everything.

740. (*President.*) Do you suppose that Darnet Fort can be completed for the same sum of money?—If the foundations stand, I should say yes, of course.

741. That would make the expenditure altogether, taking the 80,000*l.* and twice 30,000*l.*, 140,000*l.* and odd?—Yes, for the completion of both works, without the iron shields or the armament.

742. (*Major-General Simmons.*) Have these amounts, in addition to the present contract, been estimated for by you?—No, not at all.

743. Whence, then, do you procure them?—From Mr. Sands, the War Office surveyor. I obtained them from the memorandum of the War Office surveyor.

744. Have you examined that estimate?—No, I have never seen it.

745. Then you cannot say whether that estimate is adequate for the work?—No.

746. You do not present that as your estimate, and you are not at all responsible for it?—No.

747. You have not seen the plans on which the estimate is framed?—Not at all.

748. (*President.*) Do you consider that the same sum of money for which the Hoo Fort can be completed would complete Darnet, looking at its present condition?—All the work having been done before my time, I have not considered it my business to look into that matter.

749. (*Major-General Simmons.*) What is the name of the contractor who has the contract for Hoo Fort?—Henry Lee and Sons.

750. Is his contract a lump sum contract, or is it based upon measurements and bills of quantities?—It is based upon bills of quantities and measurements.

751. If the measurements of the work, as executed, differ from the bills of quantities, are the War Office liable to make good any differences?—Yes.

752. So that a lump sum contract is not final, as it depends upon the future measurements?—It is not strictly a lump sum contract; it depends upon the measurements and the bills of quantities. If you have any work done that is not in these measurements, you must pay extra for it.

753. Are you satisfied that the amount is sufficient to cover the work to be done—that the quantities have been sufficiently taken out?—I have never been directed to go into that, and therefore I have never gone into it.

754. The Committee, therefore, cannot consider 23,000*l.* as the final sum to be paid for the completion of that work to a given level?—It might be accepted as a close approximation to the amount, because you get it from the highest authority. It is not my estimate, but that of the War Office. The ordinary practice observed in all such cases is that the War Office surveyor comes down with the contractor's surveyor, and they take the quantities. Upon them the tender is made, and the Commanding Royal Engineer receives an order to go on with the work when that tender has been accepted.

755. But any difference as to quantities in the execution of the work may lead to an increase in the amount?—Yes; so that if there is more work done, it will be paid for at that price. (The contract was read.)

756. (*Colonel Elwyn.*) With regard to the 5,000*l.* which you have mentioned as required to complete the fittings, will that include the racers and lifts, and all the appliances necessary for mounting the guns?—I believe so; the lump sum was given me as given in the paper I have handed in. I cannot speak positively about it, but Mr. Sands is the authority. I think the best information will be obtained at the head office.

757. (*Major-General Simmons.*) Can you state what proportion of the expenditure upon these forts has been due to the defective foundations or changes in design?—As far as I can get at it in the records of my office the extra cost, that is the cost incurred, above the estimate between the two forts is 18,457*l.*, the foundations of Hoo cost 10,307*l.*, the contract for making the foundations was 6,308*l.*, and the difference, therefore, is the extra excess upon the foundations of Hoo. With regard to Darnet the contract was 7,525*l.*, the cost was 19,827*l.*, and the excess upon the two together amounted to 16,301*l.*, that is as to the foundations. Adding certain extras shown on the paper I hand in, it may be said that the extra cost on Hoo has been 4,590*l.*, and on Darnet 13,867*l.*, or together 18,457*l.*

758. (*President.*) Do you mean by the foundations the whole of the basement as far as the Committee saw them?—No; not the building, the concrete only. Then for the building and footings in Portland cement, which were ordered for Hoo and Darnet, the extra cost for the two was 678*l.* I will furnish a return giving all the particulars. (It was handed in).

The witness withdrew.

(*Adjourned till Thursday next at eleven o'clock.*)

Thursday, 28th May, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieutenant J. C. ARDAGH, R.E., *Secretary.*

ROBERT SANDS, Esq., examined.

R. Sands, Esq.
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759. (*President.*) Have you been employed in the War Office in measuring works and taking out quantities?—Yes.

760. And in examining works under construction in different parts of the country?—Yes, I have been so employed.

761. Has your attention been much drawn to Hoo and Darnet Forts?—Yes; my connection commenced with the Hoo and Darnet Forts in the preparation of the contract for the basement. I had nothing to do with them before that time.

762. At what date was that?—11th March, 1863.

763. Had any failures in the foundations shown themselves at that time?—No; I was ordered by Colonel Jervois to visit the sites so as to provide for all necessary contingencies in the contract about to be entered into.

764. You were not sent down to examine into the foundations at all?—I was sent down to see what it was necessary to provide for. I found on my visit that the foundations were covered over with 18 inches of mud which had been put in to preserve the concrete from the frost during the winter.

765. Was any of that mud removed to enable you to see the state of the concrete?—No; but I made every possible enquiry as to the state of the foundations, from all parties in the Chatham office, and at the two forts, and it was considered that they were perfect.

766. Do you remember what the thickness of the concrete was at that time?—At Darnet 15 feet, and at Hoo 10 feet, which was not added to; those foundations were completed at that time, and brought up to the full height ready for the basement contract.

767. At the time when you saw it, it was in its present state?—Yes, as regards thickness.

768. Had you no reason to expect any failure in the foundations from the enquiries that you made, and from what you saw?—No; they were considered to be in a good state, but I thought we might calculate upon their sinking after receiving the weight of the superstructure, and in regard to making a provision for any possible subsidence, it was decided at the War Office to postpone the question until the walls were brought up to about the springing level, when any height might be added if found necessary. It was considered if the foundations went down evenly, a few inches would not materially injure the work. If was found that when the contractor commenced to lay the foundations the concrete was perfect, and it was all level except its finishing, which was a little rough in places, but nothing had gone wrong.

769. (*Major-General Simmons.*) The upper surface of the concrete was generally level?—Yes; but the concrete required a little paring off in places, for some of the large flat-bedded stones for the basement walls.

770. (*President.*) Had the levels been taken to ascertain whether there was any sinking of the concrete?—Yes; as I became connected with the work I carefully noted its progress; the contract was accepted on the 27th May, 1863, and stipulated the work should commence in about a month.

771. (*Mr. Hawkshaw.*) You mean the superstructure?—Yes, the basement.

772. (*President.*) The first contract only included the basement?—No; the first contract was for the concrete foundations; the second, by another contractor, for the basement.

773. That, as I understand, began on the 27th May, 1863?—Yes, it was then accepted, and he was to commence the work in about another month; he did commence on the 22nd June to land the materials.

774. Were there any fixed levels then, or points marked to show the level at the time the work was commenced?—Yes; on the 1st June, Lieut.-Col. J. R. Mann reported from observations made by himself, that no change of level had taken place in the concrete foundations of Hoo and Darnet during the last two months. They were considered perfect, and the final bill for the foundations was sent to the War Office in January 1863. I do not know whether any levels were taken in January, but it is certain they had been taken in April, two months before Colonel Mann made his report.

775. You are not aware that any levels had been taken previously to that?—No; I suppose that as the concrete was put in, it did sink less or more into the soft ground, but it was brought up to the proper level and finished.

776. From those observations I suppose that there was no sinking in the two months immediately previous to the commencement of the work?—I believe not, but I was always under the impression that they would sink less or more from the weight.

777. Will you now have the goodness to state what occurred subsequently?—The work went on, and nothing appeared until March 1864, when there was a fracture discovered at Hoo, but it was very slight.

778. Did you see that yourself?—Yes, I saw it shortly afterwards, it was considered of very little consequence.

779. (*Major-General Dickson.*) It was a fracture in the wall, was it not?—Yes; it appeared at the drain-pipe; it was scarcely observable.

780. What height were the walls then?—I think, 8 feet to 10 feet in height. Cracks were so reported in both forts—first at Hoo, and then at Darnet.

781. (*President.*) Was it thought necessary to

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take any measures in consequence of those cracks?—No; they were not thought of much consequence, but the cracks at Darnet began to show a good deal.

782. (*Major-General Simmons.*) Were both the forts at that time up to the same level?—No; I think that Hoo was higher than Darnet. The contractors then put the main force upon Darnet, and shortly afterwards the cracks began to show; but Hoo never moved much. On the 3rd June, 1864, there were strong iron bands recommended to be used for Darnet, in consequence of the cracks extending.

783. Had any levels been taken between June 1863 and June 1864, that you are aware of?—Yes; levels were continued to be taken, and more frequently after the fractures appeared. Colonel Jervois was very particular about the levels.

784. Have you heard what those levels showed at that time, with reference to what had occurred in the interval of twelve months?—No; I am not fully conversant with those levels, but I know that they were not much out—not more than an inch or two.

785. In fact, your attention was not called to any material difference in the levels so as to make you think it necessary to take any precautionary measures at that time?—No; I do not think so at that time; but when I was preparing the third contract, that is, the present contract, fearing that some alteration might have taken place in the levels of the forts, I wrote down to the Clerk of Works (after speaking to the Commanding Engineer at Chatham), stating that I should like to have some levels taken to ascertain what provision would be required in the present contract.

786. At what date was that?—That was at the end of August last. The Clerk of Works sent me a report of the levels, it did not show how much the forts had sunk, but that they remained horizontal. I, consequently, did not think it was necessary to provide, in this contract, for making up anything; it was only about an inch out.

787. And that in a space of four years?—Yes.

788. You did not think it necessary to provide for anything in the present contract?—No, because I found that the forts remained horizontal, sufficiently so for any practical purpose. I have a note and a sketch showing the levels taken all round each fort.

789. (*President.*) The present contract to which you are now referring, was for a fort greatly reduced in diameter from the original plan?—No; the gun floor only is reduced in diameter, this design distributes the weight over the inner part—the parade.

790. Was not the original plan intended to raise the casemates for guns—say, upon the basement structure?—Yes; I always understood so.

791. By the present plan that is not intended?—No: the design has been altered to prevent the loading of the basement of the outer ring by a tier of guns.

792. You were of opinion that the cracks were sufficiently serious to make it necessary to modify the original design?—I was.

793. (*Mr. Hawkshaw.*) At what date was this?—It was in September 1864.

794. (*Major-General Simmons.*) Will you state to the Committee the nature of your report at that date?—In June 1864, strong iron bands were recommended by the Commanding Royal Engineer, and then, in September 1864, other measures were proposed; that was on the 7th September, then the walls were up. On the 20th September, the walls of both forts were covered over with concrete, to carry off the rain, so that the outer walls and arches were then finished.

795. In fact, at that time the contract for the basement floor was completed?—It was nearly completed, but a good deal of work in the interior had still to be done. The outer walls and arches were certainly completed on the 20th September, 1864, and covered over with concrete.

796. In fact, the principal part of the contract was completed?—Yes, the principal part of the work was done; on the 16th of September, I visited the forts, to take measurements, and they were at this time in their worst state, as the remedies that have since been adopted were merely in preparation, but had not been acted upon; that is to say, the iron band was being prepared in the smith's shop; it had not been received, and nothing was done then except, I believe, the iron link-bond for Darnet—I mean the bond that went through the masonry.

797. (*President.*) You have stated that other methods were proposed, but you have not stated what those other measures were?—No; by other measures I meant the glacis and sea-wall. I said that they were under consideration and in preparation, but had not been acted upon on the spot.

798. You saw the defects before they began to remedy them?—Yes; at that time the cracks at Hoo were scarcely visible; but I feared they might extend, as at Darnet. I was convinced of the necessity of doing something to equalise the weight over the whole surface of the concrete foundations, as well as to finish the glacis and sea wall to both forts; and, in addition, at Darnet, to strengthen it with tie-rods—to place an iron band round the base, and also a link-bond in the upper courses of the masonry, which latter was partially laid; it was found that Hoo Fort did not require any of the latter precautions, and I am now of opinion that both forts may be considered secure if completed on the present design.

799. (*Major-General Simmons.*) When you say the present design, at what date was that?—The design adopted since September, 1864.

800. Are you speaking of "the present design" as the design in September, 1864?—No; the plan of the fort as at present executing was designed since September 1864, and I consider the forts secure if completed under the present design.

801. (*President.*) Is that your opinion now?—Yes; at that time I thought it would be necessary to alter the design, and when I met General Moody, in Chatham, after I had visited the forts, I told him that I did not think it would be desirable to put a second gun-floor on the basement.

802. (*Colonel Harness.*) The present design is in accordance with the new suggestion of leaving out the second tier?—Yes; and of equalising the weight. I went to General Moody, and we had a long conversation on the subject. He asked me what I thought about it, and I replied, "You will never be able to carry out that fort as intended."

803. (*President.*) In order that there may be no misunderstanding, does the remark which you just now made as to the present design refer to the present time, and not to 1864?—My remark referred to the original design, which was re-

placed by another since September 1864, and the altered design is now being carried out.

804. Then that altered design was not before you in 1864?—No; there was not a word about it. I did not know Colonel Jervois's ideas on the subject.

805. Will you go on now, if you please, with the history of the works?—I believe that is all I can say about them.

806. Have you nothing to tell the Committee about the measures you took with respect to equalising the weight?—Yes; I visited the forts from time to time, and we entered into a new contract for carrying out the glacis. The glacis and the sea-wall were commenced on the 5th November, 1864. At least, the contract was entered into, and they were told to commence immediately, as it was desirable to have the glacis and the sea-wall completed.

807. (*Major-General Simmons.*) Was that for both forts?—Yes; I had then an opportunity of repeatedly seeing the work as this contract progressed.

808. When the glacis was completed under that contract, was any subsidence caused in the marsh upon which it was placed?—Doubtless a good deal of the glacis went into the marsh, as it was very soft.

809. Were any measurements taken to show the extent to which the marsh had subsided as the glacis came upon it?—Yes; but I had doubts of ascertaining from these measurements the positive quantity disappearing in the marsh.

810. (*President.*) Of the glacis?—Yes, to some extent; and then it was agreed to measure the spaces where the excavation was coming from, that the contractor might be settled with, if necessary, for the exact quantity that he excavated and wheeled on to the glacis. I do not think that it could be clearly ascertained to what extent the marsh did actually sink

811. (*Major-General Simmons.*) Payments were made then, I suppose, upon measurements, and not upon the quantities as excavated?—Yes; upon the quantities as excavated. Measurements were at the same time made of the stuff deposited.

812. (*Mr. Hawkshaw.*) Whereabout was this stuff excavated?—At Darnet, nearly all upwards of 300 yards away from the fort. At Hoo it was on an adjoining part of the island, out of our boundary altogether, and sufficiently distant. In the case of Hoo, the distance was about 250 yards.

813. (*Major-General Simmons.*) It has been stated to the Committee that a plank had been laid upon the marsh with a pole standing up from it, with a view to measuring the subsidence of the marsh as the weight came upon it, have you any knowledge of that fact?—Yes; I know that it was done, but I never placed much reliance upon it. I tried to make something of it, but could not. There was no great amount of subsidence.

814. Did it not give rise to a dispute as to what the amount of the subsidence was, when accounts had to be settled with the contractor?—I wished, and so did the Department at Chatham, to measure the glacis, and allow a certain amount for subsidence, but the contractor would not agree on the amount to be allowed. Measurements had been carefully taken of the ground excavated, it was good firm stuff. I saw it from time to time coming out in square blocks—the sides of the excavations remaining perfectly perpendicular for months after it was excavated, although the tide came up upon it; the work was paid for in this manner.

815. (*President.*) You mean for the amount of earth that was moved by the contractor?—Yes.

816. (*Mr. Hawkshaw.*) It was measured in the excavations instead of being measured in the embankment?—Yes; the actual amount moved of solid earth. When it was laid on the glacis it seemed to occupy more space.

817. (*Major-General Simmons.*) What was the amount of difference between the measurements as taken by you, and as taken by the Commanding Engineer at that point?—The measurements of excavations, as well as of glacis filling, were made by the local officers and contractor's agent, and all disputes as to quantities were amicably arranged; but the contractors objected to be paid on a measurement of the glacis, on account of the uncertainty of the actual amount of subsidence, as well as the alleged shrinkage of the filling, which in that case it was necessary to take into account, making a difference with him at that period of, I think, about 600*l.*

818. At what rate per cube yard was it paid for?—We paid 10½*d.* per cube yard. That was for both forts, and this price includes moving 100 yards.

819. According to the two measurements it would appear that the sum to be paid for the work, as measured upon the embankment, would have amounted to 600*l.* less than you paid for the work as measured in the excavation. Was it not so?—No; as I had to certify these measurements I thought that the fairest way under all circumstances was to pay the contractor for the excavation, and it was so decided by the authorities in the War Office.

820. Supposing that the 600*l.* were made up of earth at 10½*d.* per yard, it would amount to 13,714 yards of material?—Yes; but extra wheeling generally has to be added to that. The filling at Darnet cost 1*s.* 9*d.* per yard, and at Hoo 1*s.* 11¾*d.* The average was 1*s.* 10¼*d.* a-yard, including the wheeling, &c.

821. That would be about 4,340 yards, and that, according to the Commanding Engineer's idea, would probably represent, would it not, the amount of subsidence in the marsh?—Yes; together with the alleged shrinking of the filling into itself.

822. (*President.*) Do you remember when you paid for the excavation, whether the sum that was allowed for it came nearer to the offer made by the Commanding Engineer, or to the Contractor's demand?—In making up the accounts with the contractor's surveyor, the correctness of the two modes of measurement had to be considered, and altogether I thought that the fairest way would be to pay for the excavation; and so reported to the Commanding Royal Engineer, remarking that I thought the points in dispute could not be successfully arbitrated. This opinion he reported upon to the Director of Works, together with that of the superintending officer, also the representations of the contractor's surveyor. A decision was arrived at by the War Office authorities.

823. Was the amount paid to the contractor upon the measurement of the excavation more or less than was offered to him by the Commanding Engineer?—No offer was made by the Commanding Royal Engineer to the Contractor, but he was ultimately paid 402*l.* more than the Commanding Royal Engineer recommended in his report to the War Office.

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824. You cannot form any opinion as to the effect produced by the completion of the work on the glacis. It appears to have been completed in 1866. Have you any data to show what alterations took place between 1864 and 1866?—I have it in the detailed reports.

825. (*Mr. Hawkshaw.*) Do you think that any subsidence of any consequence took place between 1864 and 1866?—I think it has been probably becoming lower every day since, that is consolidating more or less, and that it will take two or three years to thoroughly settle down.

826. Not the fort?—No; the glacis.

827. Do you know whether or not during those two years there has been any settlement in the fort?—No; it has been levelled, but I do not know.

828. (*President.*) You examined the forts did you not in September, 1864?—Yes.

829. Did you examine them again when the new contract was made in 1867?—Yes.

830. Was your attention called to any change which had taken place in the forts in that interval?—Yes; I made every enquiry as to subsidence, if the forts remained level I should not think much of a few inches of subsidence. I wrote down to the Clerk of the Works on the spot to take the levels all round.

831. (*Mr Hawkshaw.*) For what length of time were those levels continued to be taken?—The weather was very favourable, and I suppose it was done in a day.

832. It was only done occasionally?—Yes, at stated periods.

833. Has it been done lately?—I do not know.

834. (*President.*) Have you any reason to suppose that by the increase in the cracking of the masonry any further damage had been done to the forts in that interval?—No; I do not think there had been. I found Hoo, and in fact both forts apparently exactly as they were. The damage had not increased.

835. So that if any subsidence had taken place, it had not exercised any prejudicial effect upon the fort?—No.

836. (*Mr. Hawkshaw.*) How lately have you seen the forts?—I have not seen them since August, 1867.

837. (*President.*) Have you not been down since the present contract was begun?—No.

838. (*Mr. Hawkshaw.*) At that time you perceived no difference?—I did not perceive any difference. I did not suppose that they would become worse.

839. (*Major-General Simmons.*) Did you take the quantities for the contract upon which the basement story was built?—Yes.

840. Have you got those quantities?—Yes.

841. Can you produce them?—Yes; this was the invitation (handing in a paper).

842. What was the amount of the contract upon those quantities?—19,500*l.*

843. Was that for both forts?—Yes.

844. What was the amount actually paid for those works upon the measurements that were made afterwards?—I can produce the bill for the work, but the fact is there were many additions, door frames, and other additional work.

845. 24,198*l.* appears to have been the amount paid on the 30th of June, 1867?—This is the press copy of the actual bill (producing the same). The amount of the contract for the two forts was 19,500*l.* The amount for additional works at Hoo was 1,578*l.*, less for omissions 103*l.*, total 1,474*l.*; at Darnet 2,057*l.*, less for omissions 131*l.*, total 1,926*l.*, or for both forts 3,400*l.*

846. Was this the final statement?—Yes.

847. What was the date of it?—The 3rd of March, 1866.

848. (*Mr. Hawkshaw.*) In the 3,400*l.* would there be included travelling expenses?—No; that is a different grant. There was another account called "Extra Claims," 1,652*l.* 11*s.* 6*d.*, was claimed by the contractor.

849. (*President.*) By the "Progress Reports," it appears that 1,100*l.* was certified?—The 1,100*l.* was a balance due on the general account, but only 278*l.* 11*s.* 6*d.* was paid on the 1,652*l.* 11*s.* 6*d.*, an additional 150*l.* was paid for surveyor's charges.

850. Were any of these extras owing to the failure of the foundations?—Not a shilling.

851. The extras upon this account appears to amount to nearly 25 per cent. upon the contract; is that a larger percentage than you generally expect to find in the execution of works?—That depends upon the nature of the works. 23,328*l.* 12*s.* 5*d.* was the total paid on the basement contract, including additional work. I know a claim was made for superior work; the contractor alleging that the work was superior to the specification, but it was not admitted; he said the Local Department had insisted upon the work being executed in a more expensive manner than was contracted for.

852. (*Mr. Hawkshaw.*) How do you account for this. The contract price was 19,500*l.*, but you actually paid 24,198*l.*; what makes the extra cost amount to 24 per cent.; how do you suppose that could have arisen?—Certain work only was provided for in the contract; but other work was given to the Contractor which was not in the contract,—for instance, there was no carpenters' work, and we had to provide all the frames, and other work of that kind; the walls and piers were raised 6 inches in height, and 6 inches of additional concrete was laid over the arches.

853. (*Major-General Simmons.*) What was the cause of those 6 inches of concrete being laid on; was it in consequence of the settlement which had taken place?—I think partly that and partly to provide for the protection of the arches from the concussion produced by the firing of heavier guns.

854. (*President.*) Do you consider that 24 per cent. is an unusual amount to pay for extras upon a contract, or is it a larger extra than is usual?—Upon some contracts we do not pay anything beyond a few pounds; it must depend upon circumstances.

855. Do you consider it necessary, in calculating what the future cost would be, to make the same allowance for extras?—No, I think not. I think that when it is a lump sum contract, and it is carried out exactly as contemplated, and circumstances do not arise to alter it, we have nothing extra to pay.

856. Do not such circumstances generally arise in these contracts?—Yes; they do arise.

857. (*Major-General Simmons.*) In stating that you expect a lump sum contract to cover all the expenditure, is not that lump sum contract liable to alteration by any variations that may be found in the bill of quantities?—Yes; and that is provided for in the contract; we have a provision for omissions and extras as they may occur during the work.

858. (*Colonel Harness.*) Suppose the work, for

example, to be executed under a running contract upon an estimate contained a schedule of prices, would you not, when you had measured the work according to the prices in the schedule, also add a sum for contingencies?—Yes.

859. How much would you add?—We generally add 10 per cent., and we consider that that is necessary.

860. In what respect does the contract that you have made, as to which you have got measurements, and as to which the contractor is to make an additional charge for work executed, exceeding the measurements, differ from the estimate made from the schedule of prices?—I do not know that it differs at all; of course, in most contracts we have extras, there is no doubt about that, but as for the sum regulating any certain percentage upon it I have to look at the circumstances of the case.

861. Then an item for contingencies would be equally applicable to that contract as to an estimate made from a schedule of prices?—Yes.

862. (*President.*) Do claims often arise out of a difference in the bills of quantities, the contractor having done more work than was originally estimated for?—The surveyors are accountable for that, or for any mistake. There have been mistakes made, and the contractors have made claims.

863. Did you prepare the estimate for the completion of Hoo Fort under the present contract?—Yes.

864. In preparing that estimate, did you make any allowance for extras and contingencies?—No; because it is a lump sum, and the total is the sum agreed upon for the performance of the work.

865. Do you consider that a lump sum will be sufficient to complete the work?—Under the contract that we are now going on with there are some extras; the first arose from throwing on some cement grout on to the top of the old concrete, and the expense of doing that was not provided for.

866. (*Major-General Simmons.*) When you took out the quantities for the contract for the basement had you then before you an estimate for the whole fort?—I saw it in the schedule of the Act of Parliament.

867. You had seen the actual estimate, and had it before you, for the whole of the fort?—Only in the schedule of the Act. Colonel Jervois generally makes out the design, and asks for an approximate estimate.

868. How is the approximate estimate made; is it in taking out quantities?—Yes; in a rough way.

869. At a cube price?—Some parts of it as cube, and some parts are regular measurements from the plans.

870. In the case of the two Forts, Hoo and Darnet, how was that approximate estimate made?—Just in the way I have mentioned.

871. Was it made by cube measurement, or by taking out the quantities from the plans?—I do not recollect exactly, but those are just rough estimates.

872. Do you make these estimates?—I sometimes do.

873. Can you produce the original estimate for Hoo and Darnet Forts?—Yes; I can. I did not make it, but then when we call upon 15 or 20 contractors we receive tenders, and in this case the lowest tender was 19,500*l.*; others ranging from the lowest sum to a very high one.

874. What I am desirous of ascertaining is whether your estimates as framed are generally sufficient to cover the expenditure, and therefore I wish to know upon what principle those estimates were framed, if you have framed them?—Colonel Jervois gets them in order to guide in some measure his design; it is merely for that purpose.

875. (*President.*) In the Schedule of 1865 the amount of the estimate for the Medway works was 329,000*l.*; it now appears that they will require 395,000*l.*; how was the sum of 329,000*l.* estimated?—I do not know how those amounts were made up. I had not come to this office then.

876. (*Mr. Hawkshaw.*) Can you state what the estimate for the two forts was, according to the approved plan?—This is the accepted contract (producing the same); the amount is 45,900*l.*; that was the lowest tender for the two together, 23,035*l.* for Hoo, and 22,865*l.* for Darnet; Darnet tender was only conditionally accepted.

877. (*President.*) Was the tender of 45,900*l.* for Hoo and Darnet accepted?—Yes, but only conditionally, as regards Darnet.

878. (*Mr. Hawkshaw.*) The contract for Hoo Fort, according to the approved plan, appears to have been 23,035*l.*—Yes; I have made out a statement, and I believe that it agrees with Colonel Ward's; but he made no estimate for the completion of that design; it was made out in the War Office.

879. What does this contract comprise; is it the entire completion of the fort?—No, it does not mean that. The present contract is to provide for the completion of the shell of the fort. (A paper headed "Medway Defences" was handed in as follows:—)

MEDWAY DEFENCES.

HOO FORT.

	£	*s.*
Amount of Messrs. Lee & Sons' accepted tender, as per bills of quantities ..	23,035	0
Probable amount of extra work on the above contract of Messrs. Lee & Sons'	250	0
Estimated amount for asphalte work executing under the running contract with the Asphalte Company	1,300	0
For work not included in Messrs. Lee & Sons' contract and still requiring to be done, as per accompanying estimate	4,936	14
Surveyor's charges, and lithography ..	166	10
Total probable expense of completing Hoo Fort	29,688	4
Add expenditure incurred previously to present contract on Hoo Fort ..	33,507	0
Total for Hoo Fort	63,195	4
NOTE.—The expenditure incurred on Darnet Fort amounts to	43,485	0

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880. What have you allowed for contingencies altogether upon the total sum?—There is 448*l.* and 250*l.*, making together 698*l.*

881. Is there anything more?—Nothing more.

882. I thought you stated just now that you generally allowed 10 per cent. for contingencies?—Not on a lump sum; we do not consider ourselves confined to any particular sum, so long as the amount in the Act is not exceeded; if we do that it then becomes a serious question.

883. What would you expect to be the result

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on the completion of Hoo Fort, with reference to your own measurements, and your own bills of quantities, would you expect it to be completed and the contractor settled with for the sum of money which has just been mentioned?—I rather think it would be so.

884. (*Colonel Elwyn.*) Does that estimate provide for laying the racers for the guns, and leaving the fort in a position to be armed?—Yes.

885. (*Colonel Harness.*) But I think it does not provide for the iron shields?—No; it includes all the magazine fittings and work of that kind.

886. (*Major-General Simmons.*) I think you stated just now that there are already some extras beyond the 23,035*l.* upon that contract?—Yes; there is a sum of 250*l.* I was questioning the Clerk of Works at the station as to what the extras were upon it, and he said they had, up to the present time, made a saving of 155*l.*, and there was an extra of 105*l.* allowed.

887. (*President.*) Then in fact, there is no excess at present?—I believe not; the saving of 155*l.* arose from not taking up the brick foundations in the execution, as provided in the Bill of Quantities; I am not quite aware of the amount of extras at the present time.

888. (*Mr. Hawkshaw.*) Do you think that the fort will be completed for the sum mentioned in the estimate?—Yes.

889. Do you think that we might assume that there will be no modifications made to swell that estimate?—I think so.

890. (*Colonel Harness.*) Did you make this estimate yourself?—Yes.

891. (*Major-General Simmons.*) Is any amount taken in this estimate for completing the glacis by levelling and so on?—Yes, you will find it amongst the last items of the estimate.

892. (*Colonel Elwyn.*) Has the estimate been so carefully framed as to provide for all the work necessary in the amount asked for?—Unless the plan is altered. If the plan is altered, then we must pay for the alterations.

893. (*Major-General Simmons.* In the estimate upon which the fort is now being completed, is any provision made for fixing the iron shields in the casemates?—None, excepting the sinking in the granite, for the shields.

894. There is no iron-work included to rest the shields against?—No.

895. In taking out the quantities for those casemates, is no provision whatever made for letting the shields in, or do they derive any support from the pier walls or the side walls of the casemates?—Yes, I think there is some sinking in the masonry; according to the plans there is a certain quantity of sinking, all that was necessary, is provided as shown in the drawings.

896. Have you got the details of that?—Yes; I have allowed for sinking-in the plate in the sill course of the casemates.

897. (*Mr. Hawkshaw.*) Is there only to be one plate at the bottom?—Yes; on the floor of the casemates, provision has been made to let in one plate in the sill course.

The witness withdrew.

[Captain Frederick Beaumont, R.E., examined.

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898. (*President.*) The Committee wish to obtain from you any information you can give them as to the works on the Isle of Grain, and the cost of the battery there?—I have already put in a written statement; but this (pointing to a plan) is a section of the battery and of the battery magazine; the works on the Isle of Grain consist of a fort and battery; the fort, in addition to its main object, affords a defensive position for the protection of the battery.

899. Will you be good enough to lay before the Committee the plans and sections on which you are now working?—Here is a section of the battery and magazine as executed, showing the original position and subsidence of the concrete.

900. What is the plan upon which you are now working?—The plan has been prepared in accordance with orders from the War Office to put the battery and magazine in order as they stand, with the least possible expenditure, leaving the earthworks generally in such a condition that it could be subsequently adapted for guns in any way that might be decided on. No detailed plan embodying the above instructions has been sent to London, as the work consists generally of taking the slopes as they are, dressing them to a proper inclination, and where necessary making up the levels of the earthwork.

901. There is a plan now lying before you for the construction of the battery on the Isle of Grain: is that the plan upon which you are now working?—No.

902. Have you got a copy of the plan upon which you are now working with you?—I can furnish one if it is required. The original design provided a building at the entrance of the fort containing four rooms; the walls of two of them having been only partially built, will be done away with; the enclosure wall is likewise suppressed. I consider that walls are out of place from the nature of the foundation; a cut which the Committee have seen in the traverse here (pointing to it) has been made with a view to lightening the weight.

903. Under what instructions are you now working?—I am working under general instructions received from the Director of Works, to complete the Isle of Grain Battery in the cheapest way, taking the slopes and levels as they are. Where a great depression in the earthwork exists, I shall make it up; but generally the heaps of earth will be taken as they are, and an average height struck. In fact the battery is to be put in order in the most economical manner, and left so that it can subsequently be prepared for guns.

904. Is it intended to form embrasures, and to lay down racers, as shown in this plan?—I have no idea about that; I have had no instructions on the subject.

905. To what extent does your work go—to forming the parapet?—Yes; it extends to the parapets, to the flooring of the magazines, and nothing else.

906. Is there anything which you are now doing which is inconsistent with carrying out the plan which is now before you?—Nothing.

907. The plan, as shown here, of mounting the guns in embrasures, you think might be carried out?—Yes; nothing that I am doing will interfere with that, so far as the armament is concerned, but it will interfere with the boundary

wall (pointing it out); we shall put a palisade instead of a wall.

908. Will you be good enough now to explain to the Committee the difficulties that arose in the first instance, and which led to the modifications which you are now carrying out?—I am speaking, to a certain extent, from hearsay. I have been Commanding Engineer only for about two years, and during one year of that time I was in Paris; the first design that was sent down showed a wet ditch round the outside of the battery, and that design, I believe, was prepared with a view to enable the quantities to be taken out, and the work to be pushed forward rapidly, because, at the time when the plan was sent down, the authorities were in a great hurry to commence the works.

909. (*Major-General Simmons.*) Can you state in what year that was?—I cannot; I do not know in what year it was. The plan was never sent down, I believe, with the view of being actually carried out, but to get some idea upon which tenders could be taken. After that, detailed plans were transmitted, which have been carried out; but in place of a ditch being excavated, as according to the first plan, the section shown here (pointing to the same) was substituted, the intention being to put a heavy mass of concrete on the marsh level, the parapet to be formed by taking surplus stuff from the excavations of the fort, depositing that round the concrete, and so making a mound of earth, which was to form the parapet. At the same time a glacis was made in front, the glacis forms not only the glacis but the counterscarp, so that there is no ditch in the ordinary acceptation of the term, that being formed by the earth which makes the parapet on one side and the glacis on the other; I am speaking now of the battery. Soon after the commencement of the work, it began gradually to subside; and the effect was shown in two places. In the first place, the ditch was spewed up, I suppose something like 3 or 4 feet; it rose generally, but principally in one spot. Besides that, the whole of the foreshore was thrown up. It was impossible to estimate the amount of the foreshore that was raised, because each succeeding tide washed it away. The effect of this sinking, in my opinion, was to break the back of the concrete (pointing to the plan); it is broken in three or four places, causing an irregular settlement. Tubes of wood were put down through the earth to the top of the concrete, to enable levelling points to be taken, and those levelling points showed that the concrete had sunk unequally; there was a wavy line instead of a straight one, making it clear that the back of the concrete was broken; these levels were referred to a datum point in the marsh. I will send to the Committee a plan and table showing the result of all the levels that have been taken.

910. (*President.*) It will show the undulations in the concrete?—Yes. The nature of the plan is this: it is intended to show the heights of certain points, A, B, C, D, F, which are levelling points. There were various levels taken for five years, giving the subsidence which has occurred; these levels were referred to a common datum, in the marsh some distance off, I suppose a quarter of a mile; at all events, at such a distance that it is impossible that that datum could have shifted. I could have brought up the levelling book, if I had thought that it would have been of any use. I cause the levels to be taken at frequent intervals; they are kept in a book, then reduced and put into a tabular shape with tracings, and sent to the War Office. When they are returned, I will complete the table and send it up to the Committee. With regard to the magazine, the general circumstances upon which it is constructed are these: underneath the marsh level, at a depth of 40 feet, is the London clay, and at about 6 feet on the average from the marsh level, you come upon a bed of shingle; this bed of shingle extends horizontally, I cannot say what distance, but as shown in this tracing, through the whole length of the magazine, from there to there (pointing to the tracing); its extent in the direction at right angles I do not know. The marsh was excavated down to the level of this bed of shingle, and then piles were driven down to a distance of 24 feet, which, as the London clay is at a depth of 40 feet, would leave 16 feet between the top of the London clay and the bottom of the piles. The piles were 25 feet long, and they had a waling piece at the top to connect them; they were driven down within one foot of the total length, making 24 feet, into the ground, passing through the shingle; on the latter was put concrete, and on that the magazine; but as soon as the weight of the magazine was imposed on to the foundations, the whole thing began gradually to subside; the actual amount of the subsidence which took place is shown in the table; it was much less than this is (pointing to the section). That subsided about five feet, but this has subsided less than that, perhaps between 2 and 3 feet clear; but that (pointing to the section) subsided unequally, as is shown by the cracks, which the Committee saw.

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911. (*Mr. Hawkshaw.*) How thick is the bed of shingle?—It is from 3 to 4 feet thick; it is 8 feet thick at one end, but it dwindles down to nothing at the other. There were no borings made sufficient to enable an accurate section of the bed of shingle to be given over its whole area.

912. (*President.*) I find that in the quarter ending June, 1861, a sum of 43*l.* was paid for borings to ascertain the nature of the soil?—There are no details in my office of the borings you refer to; they were made by the triennial contractor on the site of the fort, where there have been no failures owing to foundations.

913. (*Major-General Dickson.*) You say in your letter that the only borings you know of on the site of the Isle of Grain works were commenced in November, 1866?—At the battery, yes; with a view to give Mr. Redman, C.E., some information that he required, as he was writing a report to the Government on the question of protecting the foreshore. The foreshore of the whole of the Isle of Grain works is giving way, and steps must be taken to prevent it, or the fort will go into the sea. These are the only borings there that I know of. I except the trials which extended only a few feet in depth, to prove the thickness of the bed of shingle immediately under the magazine, a copy of the result of which shall be sent to the Committee. All that has been done as to this magazine is to let it go on subsiding, but to lighten the load.

914. (*Major-General Simmons.*) Have you seen any particulars as to the driving of the piles?—Particulars were transmitted to the War Office with the C. R. E.'s letter dated Sheerness, 18th October, 1861. I think they were driven in the ordinary way; they would go very easily

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into such stuff. There would be a slight difficulty in passing the shingle, but when they got through it they would drive quite readily.

915. (*President.*) Do you know when the cracks in the magazine first showed themselves?—I cannot say, but it was a long time before I came to Sheerness. You will see it from the levels, because the levels were no doubt taken the instant the cracks began to show, and then the progressive subsidence will be denoted by the table. I will read to the Committee what I have written as to the Battery. "This work has gone down a maximum of 7 feet 9 inches, and an average of 5 feet 1 inch. The heart of the parapet is composed of a solid (or rather what was a solid) block of concrete placed on the marsh level, and intended to serve as an emplacement for the guns. The parapet itself is composed of material brought from the excavation of the fort. The magazine has gone down a maximum of 2 feet 9 inches, and an average of 2 feet 1 inch. It is built on a layer of concrete averaging 9 feet thick, resting on a bed of shingle about 4 feet thick, the whole being enclosed in a coffer-dam of piling, driven 24 feet into the ground, and consequently a little more than half-way to the solid London clay, which is 40 feet from the marsh level. The sinking of the foundations having taken place irregularly, the concrete generally has broken, and the arches of the magazines, but especially those of the communication passages, have given way. While the mass of the works was sinking, I am told that the foreshore in front of the battery spewed up, as did to a certain extent the bottom of the ditch. These failures arise obviously from having overweighted the ground, and using a heavy material like concrete in place of the lightest possible construction. The last levels taken for the battery on 30th April, 1865, show as subsidence for the month nil. The magazine levels were last taken on 31st December, 1867, and show a subsidence of ·13 of a foot for the previous 8 months. I consider, therefore, that with their present weight, neither battery nor magazine are likely to go farther, except it be from the concussion of guns fired in wet weather; but then it would probably take continuous firing to do serious damage. The whole of the marsh is, so to speak, alive, the water level altering more or less with the tide."

916. (*Major-General Simmons.*) Is that mass of concrete underneath the parapet intended to carry the gun, platforms, and carriages?—I believe it is, and the traverses and shell recesses.

917. As seen on the section, it would appear to be rather too near the front to allow the guns to be mounted?—Yes; it does look too much in the middle.

918. Is that section correct as to position?—Yes; but it would be very easy to shift that piece of earth from there pointing to the section), and to put it on to the front.

919. According to the section which you have placed before the Committee, it appears that there would be only about 12 feet in thickness of earth, concrete, and masonry to protect the magazine from a shell coming in at a moderate depression; is that, in your opinion, sufficient protection?—I do not think that the cover is sufficient. It was designed with a greater amount of cover, and it was reduced with a view to lightening the weight on the foundations.

920. According to the plan which has been submitted to the Committee, as approved, it would appear that the thickness of earth which protects that magazine is to be increased by at least 8 or 10 feet; do you imagine that that is likely to cause a further subsidence in the foundations?—I do not think it would be safe to put on any more weight than it has now. I have had no instructions about putting on any further earth; on the contrary, I have just taken earth off. Admitting that the amount of thickness is not sufficient to provide suitable bomb-proof cover I think it would be best, under existing circumstances, to leave it as it is, and in time of war to put on a greater thickness, which could easily be done with sand-bags over the top.

921. Would not the sand-bags have the same effect as a mass of earth?—Precisely the same, only the magazine could not settle till the weight was put on, when it would go down gradually; there would consequently be every probability of the battery being available when it was wanted.

922. According to the design sent to the Committee, as approved, and dated 20th May, it appears that the whole work is to be surrounded by a wall?—I believe that is not the present intention.

923. It has not been estimated for by you?—I have had no authority for it; it was taken up in the first estimate, but it was not an approved estimate—not what we are working on now. I have every reason to believe that I shall have authority to put a palisade down, but that is a matter for consideration. I have no authority for it now.

924. (*President.*) Will you be good enough to read now what you have written about the fort?—"The parapets which failed were first designed, having an exterior slope of 1 to 1. For the first half of their height they were cut out of the solid London clay, and the upper half built principally of clay. The first winter rains caused the solid to give way, and the whole mass came down into the ditch. They were then rebuilt at a slope of 1½ to 1, with layers of brushwood placed nearly at right angles to the exterior slope, and therefore running at a considerable inclination towards the interior of the parapet. The material employed was the same as that first used, and the attempt was similarly unsuccessful. The whole of the brushwood and bad clay is now being removed, and substituted by gravel and sand, of which there is plenty on the glacis, with an exterior slope of nearly 1¾ to 1. This is standing well. With, I presume, a view to equalising the weight on the bottom of the ditch, the parapet is made to rest on a footing of chalk blocks, as shown in the tracing forwarded to the War Office this morning. This arrangement can do no harm, but to my mind it is of very doubtful utility, as chalk blocks are altogether wanting in cohesion. Two faces out of the five have stood as first re-formed. This I take to be owing partly to their having been completed before the heavy rains set in, but principally to the fact that as the original design was never carried out with reference to them, the solid clay was brought further forward, and the re-forming with brushwood was less thick. The nature of the clay, too, was better. I consider the failures have been caused, first, by attempting to cut the London clay at a slope of 1 to 1; secondly, by re-forming with an improper material—clay; thirdly, by introducing layers of brushwood, acting to carry as much water as possible to the back of the parapet."

925. (*Major-General Simmons.*) How long have the two faces that stand been in their present

state?—I cannot say; they have been put to rights before my time, but over two years.

926. (*President.*) I understand that none of the failures of those parapets arose from the want of proper foundations?—None whatever.

927. (*Major-General Simmons.*) Have there been any settlements in any of the caponnières which have been constructed, or the galleries leading to them?—No; and with reference to the parapets I consider that, if, instead of using bad clay, gravel had been used, of which there is plenty on the glacis (I do not know why it was not employed), and had the slopes been made 1½ to 1, there would have been no failures; I do not think any slope will stand permanently at 1 to 1 unless it is very carefully constructed.

928. Something has been said as to the flank walls having gone out two or three inches: which are they?—Those (pointing to the section on the table); they were got back by shoring and removing the earth from behind; they are now vertical and standing well, the counter arches behind them having been filled up solid with concrete; all this was done prior to my joining the Station.

Capt. F. Beaumont, R.E.
28 May, 1868.

929. Whatever the movement was, there is no appearance of it now on the exterior?—None; it is standing well.

930. According to the plan it would appear that seven guns are to be mounted on the Keep: what provision is there for supplying them with ammunition?—The provision is not yet made.

931. Is there any magazine (at present) within the keep?—No; but the entrance to the Grand Magazine is from the Keep yard, and the provision of a magazine in the Keep itself is in contemplation.

The witness withdrew.

(*Adjourned till to-morrow at Eleven o'clock.*)

Friday, 29th May, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Lieutenant-Colonel CHARLES GORDON, C.B., R.E., examined.

932. (*President.*) You are Commanding Royal Engineer in the Thames?—Yes; in the Gravesend District.

933. That includes, I believe, three forts—Cliffe, Coalhouse, and Shornmead?—Yes; Tilbury and New Tavern Forts as well.

934. The works at Tilbury and New Tavern, I believe, are not included in the Schedule for the Loan?—No.

935. You have made a report, giving the history and describing the present condition of the works?—Yes; I have been able to do so by looking up the records in the office; the report has been drawn up from them; I may mention that I have not been at Gravesend longer than from 1865, so that I can only give evidence as to what has occurred between that date and this.

936. The information contained in your report has been obtained from the records in your office? Yes; the report was made out in reference to those records.

937. You were able, as I understand you, to trace upon the ground the sites occupied by the three old forts, and their relative positions?—Yes.

938. You call a part of that ditch (pointing to a section) the Old Fort?—Yes.

939. Are there no records of 1795?—None. The calculations of the various weights were taken out by Captain Millar, under me, at Gravesend.

940. He was employed under you for that purpose?—Yes; there is no opinion offered in the report I have prepared, but I have given the Committee just the facts.

SHORNMEAD FORT.

Lieut.-Col. C. Gordon, C.B., R.E.
29 May, 1868.

941. (*Major-General Simmons.*) Have you any plan in your possession according to which it is intended to complete the fort at Shornmead?—No.

942. Are you aware of the manner in which it is intended to be completed?—No.

943. (*President.*) No contract has been entered into for that yet?—No.

944. (*Major-General Simmons.*) No reference has been made to you with a view to the completion of that fort?—No.

945. Therefore you cannot tell the Committee whether the works recommended by any plan for the completion of that fort are likely to stand on the present foundations?—No.

946. In this report it is stated that a general settlement was observed in the concrete foundations of about 3 inches, before the basement story was placed upon it?—Yes.

947. Do you know how that was ascertained; was it with reference to a bench mark?—There was a datum point.

948. Is that still in existence?—Yes; but it could not be relied upon now. In the report of Major Pasley it was stated that the datum point was in existence, but with regard to any subsidence shown in my report, it has not been used, because I could not personally answer for it, I have taken a line, which was level when the fort was built, and levelled round that line; and I have shown the difference of subsidence in the different parts of that line.

Lieut.-Col. C. Gordon, C.B., R.E.

29 May, 1868.

949. Do you feel confident that the subsidences, as given here, as being in addition to those that had occurred when the concrete only was in the ground, are correct?—Yes; before the basement was finished the foundation began to give way; in fact, before the basement was commenced the foundations showed signs of sinking.

950. (*President.*) Before the concrete was finished?—After the concrete was made, and before the basement was put on it, the concrete had begun to show signs of settlement.

951. Was that the 3 inches that you mentioned in the report?—If it is so stated, it is correct.

952. When were the basement buildings completed?—In November 1865.

953. In this statement it appears that the concrete had sunk three inches before the basement was placed upon it; it also appears that in places the total subsidence was even as great as 17 inches. Are the Committee to understand that those 17 inches are below the datum line which was that upon which the 3 inches were measured; does it include those 3 inches?—I cannot quite answer that, because I took the reports, as I have before stated, and I have quoted from them, and then I have taken from my own information those levels which I have given there.

954. To what datum are your levels referred?—To a point marked north of there (pointing to a section), which is about 2 inches below the datum; but I could not answer for certain, because the datum may have altered.

955. (*Colonel Harness.*) It is subject to the error in Major Pasley's datum point?—Yes.

956. (*Major-General Simmons.*) Then the subsidences given on this plan B are in addition to whatever the subsidence of your zero point might have been, and did not therefore depend upon the subsidences as taken by Colonel Pasley?—No.

957. (*President.*) You have been three years Commanding Royal Engineer at Gravesend?—Not quite three years.

958. Have you had any means of ascertaining whether your datum point has altered in that time, or have you any check upon it?—Yes, we could have, but in taking up levels from three or four different officers, you have a doubt about accepting them, and I thought the best way was to take a line and show how it has been affected.

959. (*Colonel Harness.*) How did your zero point read with Major Pasley's?—It was about 2 inches below.

960. You consider that the cracks have been occasioned by inequalities in the density of the earth caused by the former works?—Yes, caused by the former forts having been built on the same ground.

961. (*Major-General Simmons.*) I see in the statement you have made that the contracts were originally for blue Lias lime in the foundations, and that Halling lime was substituted?—Yes.

962. Do you think that that was calculated to make as good a concrete in that situation?—It would not stand in a wet soil so well as the lias.

963. Have you heard whether there was much wet found in making the excavations for the concrete?—No; the water did not rise; the earth seemed to have taken up all the water it would hold, but no more. By the section there (pointing to the same) you will see that the water came in at the first boring at Shornmead Fort, at a depth of 30 or 40 feet.

964. (*President.*) Were any means resorted to to get rid of that water?—No.

965. (*Major-General Simmons.*) In this report you have given an account of the driving of the piles; is there any record of the depth each pile was driven by the last blow?—No.

966. (*President.*) Have you at all considered how far it would be prudent to raise a superstructure upon the present foundations?—Yes, I have thought of that.

967. Do you think it would be safe to do so?—No, I do not think it would be safe to complete the work according to the original design. In Major Pasley's report, upon the completion of the concrete foundations, he recommended that the basement of Shornmead should not be commenced until the last of all the three forts.

968. As being the least stable?—Yes.

969. (*Major-General Simmons.*) Have you got the plans of the original work which it was intended to put upon that basement?—No, I have not brought them up.

970. Have you got them in the district?—Yes; the design is shadowed forth in the plans of basement at Gravesend.

971. It is a two-tiered fort, is it not?—Yes, it was a casemated work; if the fort had been completed according to these designs, the pressure per square foot upon the earth on which the lower surface of the concrete foundation rests would be 3 tons, the weight of concrete being 1 ton, and that of the basement and superstructure 2 tons.

972. A superstructure according to what plan?—The original plan which was contemplated when the work was begun.

973. (*Colonel Harness.*) Does that include the weight of the concrete in the foundation?—Yes, 3 tons does.

974. (*Major-General Dickson.*) Do you know when the original design was abandoned?—No; there is no record of it. There was a contract for the foundation and a contract for the basement, and it was supposed that there would be a contract for the superstructure, the two contracts have run out, for basement and foundations.

975. They have given up the two tiers of guns on the top?—They may or may not be given up; we have had no official notice of it.

976. (*President.*) Have you received no instructions as to that?—No.

977. This is a plan (pointing to the same) that has been laid before the Committee, not finally settled, but it it is to carry 20 guns of 18 tons weight, and that (pointing to the same) is a section of it; this is the basement wall?—Yes, it is similar to that which was sketched out in Coalhouse Fort.

978. You have not had an opportunity of considering this plan, or judging how far a bed of concrete will be capable of bearing that weight?—I have not had the plans submitted to me.

979. With regard to Shornmead, you have had no plans under your consideration?—None at all.

Cliffe Fort.

980. (*Major-General Simmons.*) In the statement you have handed in with reference to Cliffe Fort, it is recorded that the concrete subsided 3 inches before the basement story was put upon it, and subsequent settlements are recorded when the basement story was put upon it, varying up to 13 inches: have those later settlements refer-

ence to the same datum as the 3 inches?—Partially so. The datum point at Cliffe has been lost, there is none properly fixed.

981. With reference to what datum have the depressions of the basement storey been taken?—They were levelled along a course of brickwork originally laid in level.

982. What was the datum with reference to them?—Zero on the plan.

983. Have you been able to compare that zero with the previous datum?—No; as I have said, the previous datum is uncertain.

984. What is your opinion with reference to the probability of this basement, as it now exists, carrying a heavy fort of iron upon it?—I do not know what the weight of the fort is to be, but if it would not carry the basement, it would not carry much on it. The cracks are 5 inches wide in Cliffe Fort.

985. (*President.*) It would not bear much addition to its present weight?—I do not think it would.

986. That is the fort in which, I believe, there are three cracks on the west side, and two on the east side, in the concrete itself?—Yes.

987. Can you state, from your own observation, what alteration of level has taken place since you assumed the command?—There has been a sinking, and I could, with a good deal of difficulty, ascertain what it has been from the time I have had the command.

988. There has been a depression going on?—Yes.

989. But you cannot state what has been the exact amount of it?—No; it has been very slight since 1865; there had been a very great rainfall, in October 1865, and all these cracks would seem to have appeared at the same time.

990. No weight has been added to the fort in that time?—No.

991. (*Mr. Hawkshaw.*) Has the condition of this fort been stationary for any length of time lately?—For the last three months the depressions have been very little.

992. Has there been any difference of level in the last three months?—I think there has been a slight difference.

993. (*Colonel Elwyn.*) It is gradually going down?—Yes. I may mention that Mr. Giles, a civil engineer, who undertook the construction of the buildings for the cement-works of Messrs. Francis and Co., found that he was obliged to balance every wall of the building that he put up by counterpoise weights—either heaps of sand, cement, or stone; for the instability of the ground was so great that any weight of any importance caused upheaval and fracture in his buildings. He could give most valuable information, as he was for about two years engaged in those works, which were commenced in 1866. Those works are about 200 or 250 yards to the east of the present structure at Cliffe. A weight of ballast pressing with the weight of 7 cwt. per super foot, was left at a distance of 19 feet from the edge of the excavation at Shornmead; that pressed up the earth at the bottom of the excavation to a height of 18 inches for a distance of 40 feet, and a width of 30 feet, I think. The height of the heap of ballast was 7 feet; although the piles were 30 feet deep it would seem to have acted under them.

994. (*Colonel Harness.*) You mean the pressure came under the piles?—Yes.

995. (*President.*) Was it not intended to put any extra weight outside the fort?—Yes.

996. Would that have had the effect of preventing that rise of the ground?—If the glacis had been formed at the same time as the basement, and if a counterweight had been put in the rear of the work, I do not think the basement would have gone so much, but that is only conjecture.

Lieut.-Col. C. Gordon, C.B., R.E.

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997. It requires a counterweight both outside and in?—So Mr. Giles said.

Coalhouse Fort.

998. With regard to Coalhouse Fort, have the plans for the construction of the whole fort been sent down to you, or plans only for its construction under the present contract?—Only for its construction under the present contract.

999. The present contract is for officers' quarters and the gorge buildings?—Yes; the contract which was entered into by Messrs. Jackson and Shaw, on the 21st November, 1867, was for gorge buildings and certain alterations in the basement floors, doors of magazines, and stores; the basement casemates and gun-floor fittings to receive an iron roof; cement concrete for proposed iron roof, and drainage.

1000. When were those plans received?—The plans were received on the 24th December.

1001. And the work is now going on?—Yes.

1002. (*Mr. Hawkshaw.*) What does the iron roof refer to?—It refers to the cover for the guns, the iron joists for the roof and floors of the gorge buildings are part of a separate contract for 1,000*l.*

1003. (*President.*) You mention in your report an iron roof and cement concrete. Is that the iron roof of the gorge buildings, or of the fort?—It is the iron roof of the fort to cover the guns.

1004. Have you got a plan of that iron roof?—No; only a sketch, an outline.

1005. (*Mr. Hawkshaw.*) Was that done in the other two forts. Was there the same preparation No.

1006. (*Major-General Simmons.*) This (pointing to a section) does not include the new contract?—No.

1007. (*President.*) The depression in the foundations of this fort (pointing to a plan) is not so great as at Shornmead?—No.

1008. Have you at all considered how far this basement story, as it is now constructed, is capable of receiving additional weight, without danger to the foundations?—That depends upon the weight that is put on. One cannot calculate, unless one knows the weight, and the position of that weight, whether it will stand it.

1009. You cannot say what amount of weight it will stand, but do you think you can put any weight upon it?—Yes; in a particular position I think you could counter-balance it.

1010. Can you say whether the foundation would be equal to bear the weight of the iron roof that it is proposed to put on?—The fort is not in a settled state, and I could not answer for it.

1011. (*Mr. Hawkshaw.*) Has there been any movement of late in the case of Coalhouse Fort?—Yes; but very slight.

1012. How lately have you noticed any?—We took the levels about two or three months ago, and it was scarcely observable.

1013. (*Major-General Simmons.*) Is the contract upon which you are now working, for a lump sum, or is it based on a schedule of prices?—A lump sum.

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1014. Are you responsible for the quantities in that schedule of prices?—No.

1015. Or for the measurements which are made for the purpose of paying the contractor for the work done?—No; the method we pursue now is this. At the end of a month or so, I send down my Clerk of the Works, and he reports to me that so many thousand pounds worth of work have been executed, and upon that I report to the War Office to pay the contractor on account so much. Then at the end of the contract, when the whole of the work is completed, a surveyor comes down from the War Office and settles with the contractor, at which settlement I have nothing more to do than to give every facility for that settlement, and all the information I can; there are some points in the plans under this contract that I do not at this moment understand. There are certain points in the plans of this contract, which are ambiguous. I do not think they could be understood without reference to the officer or the gentlemen who drew them.

1016. (*President.*) Have you had to refer to the War Office in order to get those ambiguities explained?—Yes, I have had to ask questions respecting them.

1017. Your responsibility, as I understand, amounts simply to taking care that the quantity of work done is sufficient to cover the advance made to the contractor?—That is so; also to see that the work is properly carried out.

1018. (*Major-General Simmons.*) Will the ambiguities involve changes in the bills of quantities?—Yes.

1019. (*Mr. Hawkshaw.*) When you found there were ambiguities in the plan, would you not ask the person who made it what they meant?—Yes, they would be referred to War Office.

1020. And I suppose you would get an explanation?—Yes.

1021. (*President.*) Have you attended at the War Office in order to get explanations on points which appear to you doubtful?—No; I do not necessarily know the officer who made the plan.

1022. (*Major-General Simmons.*)—It was sent down to you as a complete plan of the work to be executed and the contract let?—Yes.

1023. Did you ever see the plan before the contract was let?—I did not see it until the 24th December; the contract was accepted on the 21st November.

1024. (*President.*) Have any difficulties arisen in the course of the construction of the gorge buildings, from the insufficiency of the foundations, or from any other cause?—None.

1025. You have alluded to ambiguities in the plans: have any delays occurred in the execution of the work in consequence of those ambiguities?—No.

1026. This plan (pointing to the same) (Coalhouse Fort) shows a weakness through this line: do you consider that any extra measures are necessary to remedy that weakness?—No, I think not.

1027. That crack has not increased of late, has it?—No.

1028. Has much weight been added to this (pointing to the plan) since you have been in command?—No; the crack appeared just when I came, in November 1865.

1029. No weight has been added since that time?—No, except the dwarf walls in the casemates, which the Committee saw.

1030. (*Major-General Simmons.*) Is the plan of the gorge and the work in the contract plan now being carried out the same as in the plan upon which the fort was first begun to be constructed?—The plans of 1861 never showed the gorge buildings at all.

1031. Was the concrete put in under the contract of 1861?—Yes.

1032. (*President.*) Was that in the same form that it is now?—Yes.

1033. (*Major-General Simmons.*) Does the contract provide for filling the ditch with water?—No.

1034. (*President.*) I see that drainage is included in the contract?—Yes.

1035. (*Major-General Simmons.*) Are any preparations made in the works for the introduction of wires for firing submarine mines, to co-operate with the guns in the defence of the river?—None. I should remark that there is no flank defence to the front of these forts.

The witness withdrew.

(*Adjourned sine die.*)

Wednesday, 1st July, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Lieutenant THOMAS ENGLISH, R.E., examined

Lieut. T. English, R.E.

1 July, 1868.

1036. (*Major-General Simmons.*) Were you employed in the construction of the forts at Hoo and Darnet on the Medway?—I was employed in the construction of a portion of the glacis.

1037. At what period?—From the beginning to the end of 1866. I began in January 1866, but I do not remember the exact day.

1038. Can you state what took place with regard to subsidence while you were making the glacis of those two forts?—The marsh under the glacis slowly subsided as the mud was piled on it.

1039. Did you take any measures to ascertain the amount of the subsidence in the marsh under the glacis?—Yes; at two points where the glacis had not been commenced at Darnet, I laid down some planks on the surface of the marsh. I then

fixed uprights to those planks, and the mud was piled round them. The levels of the planks and the uprights were observed before commencing, and the surface of the glacis and the tops of the uprights were levelled from time to time. I have here a sketch of the levels (producing the same). The planks were laid down in February 1866, and the levels were taken up to the end of September. At that time the main subsidence of the ground, under the weight of the glacis, had taken place. The thin black line shows the original ground level, and the three thick lines show the ground level at various times, in May, June, and September. The average subsidence was 1·2 of a foot, under 10·7 feet of mud, in six months. The weight of 10½ feet of mud had depressed the ground 14 inches; that is the mean of three observations.

1040. (*Mr. Hawkshaw.*) What was the maximum settlement?—1·35 of a foot, and the minimum was 1·04. The points at which observations were taken had not the same depth of mud over them.

1041. (*Colonel Harness.*) You had only two planks down?—Yes, with two uprights to each, but one of the uprights was broken.

1042. (*Mr. Hawkshaw.*) Was the surface where the planks were laid very soft when the planks were placed upon it?—One of them was on an exceptionally hard surface, where there had been a quantity of concrete made; a foot or 2 feet in depth would be lime and old concrete; the other plank was on the average surface of the marsh.

1043. (*President.*) On which face of the fort were these planks?—They were both on Darnet Fort, one facing Long Reach, and the other near the gateway; one was on the sea face, and the other nearly opposite to it.

1044. Was there a greater depression in the one on the sea face than in the other?—The greatest depression was on the opposite face, but there was most mud deposited there, and the softest foundation; there was less mud piled towards the sea side, and the ground was hard underneath the plank.

1045. (*Major-General Simmons.*) Did you also take any measures for getting the water from the concrete?—Yes; we obtained permission to lay down a syphon in each fort, for the purpose of draining the concrete. The syphon was composed of a 4-inch pipe, dipping down at Darnet about 8 feet into a hole sunk into the concrete, and at Hoo about 6 feet.

1046. Just above the Portland cement concrete?—Going about a foot down into the Portland cement concrete in each case.

1047. (*President.*) Were there any holes in the tube?—It was open at the bottom. Then we excavated through the glacis, and laid the highest part of the pipe down at about the natural level of the marsh, and then down the river bank, as far as low water mark. The syphon was provided with a valve at the upper part, and during the ebb tide the valve was opened and the water run out. The valve was closed again during the flood tide.

1048. What was the result of that?—That the water which previously to the laying down of the syphons stood about 18 inches deep on the surface of the concrete, was lowered to 6 feet below the surface of the concrete.

1049. (*Colonel Harness.*) The surface of the concrete was above the level of high water?—Not above high water of spring tides.

1050. It was only at spring tides that it rose above the concrete?—No; it had gradually accumulated there, partly from rain water, and partly from soakage through the marsh; it stood continually at that level.

1051. Was the surface left without any provision for drainage?—There was a drain above the surface of the concrete, but it did not act at all well; it was a wooden trough, and leaked; it was generally kept closed.

1052. Was that the case in both forts?—Yes.

1053. So that the concrete was always saturated with water?—Yes.

1054. Was there any action and re-action as the tide changed; did the water always remain in the excavations?—I do not think there was any perceptible difference.

1055. (*President.*) There was no rise or fall?—No.

1056. (*Major-General Simmons.*) Was the water that came from it highly impregnated with lime?—Yes, it was fully impregnated with some salts of lime; it was very bitter to the taste, and salt too.

1057. (*President.*) Did that water percolate through the concrete, or did it flow over the top?—No; the concrete was full of water, and according to an experiment that we made, there was about a quarter of its bulk water.

1058. That was not the case with the Portland cement below?—It was also full of water. I do not know the exact proportions, but the Portland cement was completely set and hard, and the concrete above was perfectly soft; you could crumble it in your hand.

1059. If the Portland cement was quite hard, how came it to contain water?—It is porous, and there were large cracks in it as well.

1060. (*Major-General Simmons.*) Did you succeed in getting the lime concrete dry?—Yes; but we had very great difficulty in laying the syphons, because the glacis had been formed, and we had to make an excavation of about 12 or 14 feet deep through the glacis, and as fast as we attempted to lay the pipes, the bottom rose up. I have seen it rise on one or two occasions a foot in a quarter of an hour.

1061. (*President.*) Was that from the pressure on each side?—Yes, the levels of the pipes were very much put out by this, and there was very great difficulty in timbering the sides of the excavations with safety.

1062. (*Major-General Simmons.*) Did you at all calculate the quantity of water that you took out of that foundation?—I should think that when the water was reduced to its lowest level, there were about from 1,500 to 2,000 tons.

1063. (*Colonel Harness.*) When the pipes rose a foot in a quarter of an hour, what was the source of the pressure from below to which they were subject?—The bottom rose from the pressure of the sides of the excavation.

1064. What was the depth of the excavation when it produced that effect?—About 14 feet.

1065. After you got your syphons in and relieved the foundation of water at low tide, to what height did you then find the water at high tide rise in the mass of the concrete?—It was not dependent upon the tide at all. I do not think that the tide made any difference to the height of the water.

1066. Then how came it to receive the water?—The concrete of the fort is exactly like a rain-water pond, surrounded with nearly an impervious wall of mud; and the rain falling on the fort

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and inner slope of the glacis, drains entirely into the concrete, and cannot escape.

1067. The only water that it receives is that which falls on the surface?—That is the principal source of supply. I think there is also soakage through the marsh, from the river.

1068. (*President.*) You stated that it was salt?—Yes; it was decidedly salt, but not so salt as the river water.

1069. (*Colonel Harness.*) Did you make any observations to ascertain whether it did rise and fall with the tide in the concrete?—I think if it had done so, we should have noticed a rise and fall, but I do not remember ever noticing any difference; in fact, I am sure there was no difference, at ordinary tides, at any rate.

1070. (*President.*) It appears that when the concrete had been put in, in the summer of 1863 or 1864, two successive spring tides flowed over the whole of the foundations to the depth of 3 feet above the concrete; do you suppose that the water had lodged in the concrete a great deal at that time?—That water was, I believe, afterwards pumped out, in order to sink a well; after that the concrete gradually filled again.

1071. You are not aware that the salt water flowed over the concrete subsequently to that?—I believe not.

1072. (*Colonel Harness.*) After you introduced the pipes, the tidal water could flow in?—A very little flowed in some times at high water spring tides, owing to leakage in the valves or from the valves not being shut in time. The pipes were provided with stop valves at the top, and they were so laid that the highest level of the pipes was between the high-water-mark of spring and neap tide, so that at neap tides no water could possibly flow in. We could fill them at spring tides, and we also had an air pump on each to fill them, if necessary, at the neap tides, by pumping.

1073. (*President.*) At the time when you took those means to ascertain the depression of the mud under the glacis, did you take any levels of the fort itself with a view to ascertain the effect produced on the fort by the deposit of mud?—No.

1074. You cannot at all say what effect that had upon the foundations of the fort?—No; it had no perceptible effect upon the cracks in the fort; the cracks remained exactly the same.

1075. Did any alteration of the cracks take place while you were there?—No; there was a very slight surface crack formed on the top of the fort, on the crown of the arches, but it was through some new concrete weathering, and we were not sure whether it was due to the enlarging of the old crack, or to the shrinkage of the concrete.

1076. In fact, there was no increase in the cracks to which your attention was specially called?—No; at Fort Darnet, when I was there, the width of the crack through the latrine casemate was 2 inches throughout; through the officers' servants' casemate, it was 1 inch wide throughout, and through the gateway it was 2 inches wide. All the cracks were of the same width all the way up, inside and outside.

1077. (*Major-General Simmons.*) That was at Darnet?—Yes.

1078. When was that?—During the time that I was there, there was no perceptible alteration.

1079. (*President.*) There are some levels referred to in December 1865; can you give the Committee any information as to these levels?—No.

1080. Was there any bench mark in the marsh by which you were able to ascertain the levels of the fort?—Yes; the levels which I observed were all taken from the same datum mark to which the previous levels have been referred, or to one from which it could be obtained. At Darnet there is a house about 200 or 300 yards from the fort, and a scale of feet is attached to one side of the doorway. That was used as a datum. A pile had also been driven into the marsh at some distance from the fort, and the level of its head was checked by the scale of feet on the door of the house.

1081. (*Major-General Simmons.*) Were the levels all referred to the same scale of feet on the house?—Yes.

1082. Was that datum in existence before you arrived there?—Yes; and I believe it had been there ever since the forts were constructed. All the levels that I took were referred to that datum, and those that were taken by Lieutenant Hogg too.

1083. Who was Clerk of the Works when you were there?—At Fort Darnet, Mr. Margetts, and at Fort Hoo, Mr. Oughton, but he left whilst I was there, and then Mr. Margetts took both the forts.

(The witness withdrew).

Friday, 3rd July, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel W. F. D. JERVOIS, C.B., R.E., further examined.

Col. W. F. D. Jervois, C.B., R.E.

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Hoo Fort.

1084. (*President.*) It appears that the magazine in the basement of Hoo Fort is protected from vertical fire by 4 feet 6 inches of concrete, and 18 inches of brickwork. Do you consider that this thickness would be sufficient to keep out a 13-inch shell?—I have no doubt that it is sufficient.

1085. Would it be practicable to put any earth on the sloping roof of the basement story, over which the guns fire, if it were found necessary?—You might put a thin plate of iron on it, if found necessary.

1086. Would a shot striking that plate be deflected into the embrasure, and would there be any objection to it on that ground?—I think not.

1087. (*Major-General Simmons.*) Can you state to the Committee the general rules which guide you in making these designs, in determining the thicknesses of material put over arches to render them proof against vertical fire?—I stated the other day that our practice at the present time in this respect does not differ from that which has been in use for many years past. In the case of this, or indeed of any other fort, if a greater strength of roof were deemed necessary, it might be obtained by plates of iron.

1088. Has no general principle been established for the guidance of the officers who make the numerous designs for these forts, so that we might see the general principle pervading the designs?—The designs have been prepared in the War Office, by officers specially employed for the purpose, under the directions of the head of the Fortification Branch, and are adapted to the particular circumstances of the case to be dealt with.

1089. The power to be resisted in all cases will be equal, being that of the 13-inch shell, which is the largest shell of the present day?—Yes. But the thickness of the arch will of course vary according to the span. I had a table drawn out some years ago showing the thicknesses that were applicable to the several spans of arches, and that was circulated amongst officers and others engaged in preparing drawings for the works. Here is a copy of the table—

TABLES FOR THICKNESS OF ARCHES.

Semi-circular Arches and Arches of 120 Degrees.

	Ordinary Vaults, Bridges, &c.						• Covering for Bomb-Proof Casemates, &c.						Remarks.
	Semi-circular Arches.			Arches of 120°.			Semi-circular Arches.			Arches of 120°.			
	Block Stone.	Brick.	Rubble Stone.	Block Stone.	Brick.	Rubble Stone.	Block Stone.	Brick.	Rubble Stone.	Block Stone.	Brick.	Rubble Stone.	
Span, 5 feet or less.. ..	0′ 8″	1	0′ 10″	0′ 9″	1	0′ 10½″	0′ 9″	1	0′ 11″	0′ 10″	1	1′ 0″	The thicknesses given in this Table for the arches of bomb-proof buildings are not, in themselves, adequate to resist the concussion of the fall, or the explosion of the charge of 13″ shells. They are calculated on the supposition that they will be covered in all cases, by a further protection of from 2 to 3 feet of concrete; or, from 4 to 6 feet of earth, according to the importance and exposure of the position.
„ 6 „	0 9	1	0 11	0 10	1	1 0	0 10	1	1 0	0 11	1½	1 2	
„ 8 „	0 10	1	1 0	0 11	1½	1 1½	1 0	1½	1 2	1 1½	1½	1 4	
„ 10 „	0 11	1½	1 1½	1 0	1½	1 3	1 1½	1½	1 4	1 3	1½	1 6	
„ 12 „	1 0	1½	1 3	1 1	1½	1 4½	1 3	1½	1 6	1 4½	2	1 8	
„ 14 „	1 1	1½	1 4	1 2	1½	1 6	1 4	1½	1 7½	1 6	2	1 10	
„ 16 „	1 2	1½	1 5	1 3	2	1 7	1 5	2	1 9	1 7	2½	2 0	
„ 18 „	1 3	2	1 6	1 4	2	1 8	1 6	2	1 10	1 8	2½	2 1	
„ 20 „	1 4	2	1 7	1 5	2	1 9	1 7	2½	1 11	1 9	3	2 2	
„ 22 „	1 5	2	1 8	1 6	2	1 10½	1 8	2½	2 1	1 10½	3	2 4	
„ 24 „	1 6	2	1 9	1 7	2½	2 0	1 9	3	2 2	2 0	3	2 6	

1090. (*Colonel Harness.*) Varying with the rise of the arch?—Yes; and the span.

1091. (*Major-General Simmons.*) To render the arches bomb-proof?—Yes. But in the case before you, which is somewhat exceptional, it would obviously be a bad plan to raise the whole work by using more concrete. As I said before, if additional strength against vertical fire were deemed necessary, it had better be obtained by iron plates.

1092. (*President.*) Your object in this fort (pointing to the plan) was to reduce the weight as much as you could consistently with what you would consider it necessary to provide against an attack to which it might be liable?—Yes.

1093. You think that 6 feet of brickwork and concrete over that magazine would probably protect it against any attack it might be exposed to?—I think so.

1094. Is there any objection to putting earth on the top over the gun casemates?—Certainly not, as a general rule. I may observe that the first experiments that have been tried of late years to test the resistance of arches to vertical fire, have only recently been commenced. Some years ago I started a proposal to have experiments made by vertical fire on arches, but I think that fell to the ground owing to its being considered that there would be so much difficulty in hitting the object.

1095. Will the experiments now in progress be extended to the effect produced by pointed shells from rifled howitzers?—As yet, the Ordnance Select Committee have not made any final recommendation as regards rifled howitzers.

1096. It is probable that rifled howitzers may be introduced, is it not?—Yes; and they will be of great advantage in batteries on shore, against the decks of ironclad ships.

1097. From what you have seen of penetration, do you consider it probable that the penetration of rifled shells will be greater than that of a 13-inch shell with vertical fire?—I expect that it would be.

1098. (*Major-General Simmons.*) Greater bursting charges would probably be used?—Yes.

1099. (*President.*) With regard to the arrangement of the passages for supplying shells; if you will look at the plan lying before me you will see that the passage from the shell store is 4 feet wide; the shells are taken from the shell store, but to get to the shell lift they must pass through a doorway only 2 feet 6 inches wide. Is there any reason why that doorway should not be made wider?—No, I think not. I think it should be of the same breadth as the passage.

1100. If two men were to meet in that narrow way, carrying shells, it might be found inconvenient?—I think it should be of the same breadth as the other passage, and there would be no difficulty in making it of the same breadth.

1101. (*Major-General Simmons.*) You might have a door to the lift upstairs?—Yes.

1102. (*President.*) The next point is with reference to light. I believe you have already stated that you have been in communication with Mr. Chappuis with regard to the lamps to be used in these places?—Yes.

1103. Would those lamps require to be trimmed often, or do you think that they would burn for a considerable time?—They would burn for several hours without trimming.

1104. I understand the arrangement to be that the light is to be passed in 9 feet through this sliding passage?—You can pull it in and out with perfect facility on a little tray, on rails, with an endless strap. *Col. W. F. D. Jervois, C.B., R.E.* 3 July, 1868.

1105. In the act of trimming, the magazine will be in darkness?—Yes; just at that moment.

1106. Is it probable that there would be any necessity for trimming the lamps while an action was going on?—None.

1107. (*Major-General Simmons.*) Have you tried candle lamps, the candles having more than one wick?—We are about to do so; we have already experimented with the lamps arranged for burning oil, and they have been reported to be very satisfactory.

1108. Objection has been taken to the oil lamps in consequence of the difficulty of getting men to trim them properly, which would be obviated if candles were used?—In the naval service candles are used for lighting magazines, and perhaps they may be found to answer better than oil for magazines in forts also.

1109. (*Colonel Elwyn.*) The glass front of the lamp chamber is flush with the magazine wall, and the adjoining part of the magazine is therefore dependent for light upon the reflector. Could not the front of the light box be made to project into the magazine to afford a direct light?—These details as to lighting magazines are still under consideration, and we are experimenting on them.

1110. (*Major-General Dickson.*) Have any means been adopted for lighting the passages themselves?—In some cases we light the passages from the side, in others we light them as a railway carriage is lighted, from the top.

1111. The light shafts would appear not to be sufficient?—I think they will be found sufficient.

1112. (*President.*) You have stated in your evidence that it was originally intended in Hoo Fort to have a central magazine running across the interior?—Yes.

1113. And that some decision was come to, that where heavy guns were used, the magazines should in future be placed under the casemates; can you give the Committee some information as to what was done with regard to the removal of central magazines, and the substitution of magazines under the casemates?—The formal approval of the principle of placing the magazines under the gun casemates was some time subsequent to the plan being adopted in this case. There were several plans proposed for magazine accommodation for sea forts, which resulted in the approval of the principle which we are now generally adopting.

1114. Were central magazines abandoned, and magazines in casemates adopted, in consequence of some discussion which took place upon the subject?—Yes; as I have already explained when giving evidence respecting the supply of ammunition to batteries.

1115. With regard to the granite piers at Hoo and Darnet, they appear to be 14 feet thick in the centre, but they are more cut away at the sides than those in Garrison Point, with a view to giving greater lateral range. Do you consider that the thickness of granite left at the sides of the embrasures would be sufficient to resist heavy shot?—I think it would.

1116. Supposing that the shot struck near the edge of the embrasure, what do you think would be the effect on the block of granite forming the inside of the pier?—It must be remembered that those granite blocks are all clamped together with iron, and that the pier practically forms one solid

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mass. I think, so far as one can judge from experiments which have been made on granite, that it would be sufficient to resist the chances of actual attack.

1117. The mode of fixing the shield into the embrasure is, I believe, not yet finally settled?—Yes, it is; we have not yet finally settled the design for the shield itself, but the ironwork for the reception of the shield is finally determined upon.

1118. It is not shown on this plan?—No; it has been done since this plan was drawn.

1119. Will it involve much cutting away of the granite?—No; scarcely any, only a little bit below. It is built in above, and the lower sill is let into a slot at the bottom of the piers. The sides are strongly connected with the upper and lower sills.

1120. Will it involve, in such works as Garrison Point Fort, any alteration in the masonry?—No; no alteration in the masonry will be requisite at Garrison Point.

1121. (*Major-General Simmons.*) Are the Committee to understand that the mode of fixing the shields is determined upon at Hoo Fort?—Yes; the detail has been lately determined.

1122. This fort being still under construction, would it not be expedient to consider the question with reference to the sufficiency of the granite piers, whether it would not be advisable to make the fort of iron all round, of a similar construction to what has been proposed for the forts on the Thames?—I went into that question, and I found that the money provided for Forts Hoo and Darnet in the schedule of the Fortifications Act would not suffice to cover the expense of making them all of iron; and considering that these are inner works forming the second line of defence of the Medway, it was not thought necessary to propose any additional expenditure with a view of making the fort all of iron instead of iron and granite. There is a resolution of the Fortification Committee and of the Defence Committee to that effect.

1123. Do you remember what the additional expenditure would have been?—I cannot tell you at this moment.

1124. Perhaps you will have the goodness to furnish a statement of the comparative expense of the granite fort with iron shields, as now proposed, as compared with iron similar to what has been proposed for Cliffe and other forts on the Thames?—The cost of the superstructure of the granite work with iron shields as now being carried out at Hoo Fort, and including 1,550*l.* apiece for the shields and frames for fixing them, will be a little under 30,000*l.* On the other hand, if the superstructure were similar in character to that which has been proposed for forts on the Thames, or were like that adopted at Plymouth Breakwater Fort, and were of that degree of strength which is now advocated as being necessary, the cost would not be under 75,000*l.*

Isle of Grain Battery.

1125. (*President.*) Is the plan lying before you the one which is intended to be carried out?—It is the plan which it has been proposed to carry out, supposing we do not adopt the Moncrieff system. If the Moncrieff carriage is approved by the Artillery authorities, I think it should be applied in this case.

1126. (*Major-General Simmons.*) Judging from what the Committee saw on their inspection, it appeared that there were considerable modifications being made in this plan; for example, that range of buildings (pointing to the plan) has been altered very much, and we were told by the Commanding Engineer that the gorge wall was to be abandoned?—In consequence of the insecure nature of the ground, it is proposed to have a stockade instead of a wall.

1127. (*President.*) Looking at the subsidence which has taken place in the mound which has been thrown up to form the rampart of this; which we are told is upon the average 5 feet, and which appears to have been still going on up to May 1868; do you think it will be desirable to try to form permanent platforms for the guns, as shown on that plan?—I think we might do it by keeping the foundation for each gun-portion separate, so that if any unequal settlement should take place, it might easily be remedied; that is, supposing one gun-portion happened to settle more than another, the racers of that gun might be levelled up accordingly. I would rather avoid building those magazines, and it was with that view that I put a remark upon the plan before you, that it is a question whether permanent expense magazines might not in this particular case be dispensed with, and the guns be supplied from the large magazines in rear; or if expense magazines were required they might be put up temporarily when required.

1128. Considering the conditions of the site, would it not be better to avoid cutting the embrasures, and leave the parapet rather as a preparation for a battery than complete it?—I would rather do so if that course were approved by all the authorities concerned. If the Moncrieff system be approved, there would be no necessity for embrazures.

1129. This battery is, if I remember rightly, at such a distance from the channel that no large ship can approach within 1,000 yards of it?—This battery enfilades the channel from the Nore.

1130. At a distance exceeding 1,000 yards:—the men therefore would not be much exposed to rifles fired from the ships engaged with the battery. Would it not therefore be better in this case to have the guns *en barbette*, even if the Moncrieff carriage should not answer, rather than in embrasures as proposed?—I should be guided by the wishes of the Artillery authorities on that point; my own opinion is that a battery *en barbette* would not give sufficient protection at that low level.

1131. The embrasures are always a point of weakness where exposed to heavy shells fired from ships, and that disadvantage has to be placed against the advantage of the men being covered?—Yes; and there is a great deal in the fact of the gunners feeling themselves screened, even though it be only by the weak earthwork at the neck of the embrasure.

1132. (*Major-General Simmons.*) But the range at which musketry could be brought to bear against this battery is very considerable?—Yes; but you must also take into account the probability of shells bursting short of the battery.

1133. Except those who would be loading the gun, the men would be protected by the parapet?—Four men would be required to put the shell into the gun, and these, as well as the gunners sponging and ramming and serving the vent, would all be exposed whilst working the gun.

1134. (*President.*) If the gun were placed on a turntable it would be turned round, so that the men would be in under the parapet?—That would not alter the case. If the gun were *en barbette* the numbers of the gun detachment, which I have just mentioned, would be seen above the parapet.

1135. So that the heads of the men would still be exposed?—Yes; for in an ordinary battery *en barbette* the gun is always above the parapet.

1136. And the men must be exposed when loading?—Yes; therefore, at this low level I would rather have the screen afforded by the embrasures.

1137. Do you think it advisable, considering the subsidence still going on in this battery, to go to any great expense in completing it, or would it not be wiser to throw up an earthwork that could be completed when it was required?—The subsidence, which has been gradually decreasing will probably ere long cease, and the earthwork, which notwithstanding the subsidence is 21 feet high, is just what your question suggests as being desirable to have at this site. This earthwork might very well be adapted for guns mounted on Moncrieff gun-carriages, but supposing the Moncrieff system not to be adopted, my view is to form the existing earthwork into an embrasure battery without iron shields; to put each gun on a separate wooden platform, which might be levelled up in case of unequal subsidence, and to leave the expense magazines to be constructed temporarily in time of war.

1138. (*Major-General Dickson.*) But guns of that weight, with a wooden platform, would require racers?—Yes; and it is proposed to provide them. In continuance of my reply to the previous question, I would add that this being a well-placed battery for raking the channel, I do not think that it would be advisable to wait till a time of war to place the guns in position, because if required at all, these sea batteries should have their armament on the spot, for it is a long operation to get great guns into their places.

1139. Then you would complete the battery?—I would finish the main magazine, lay the racers, complete the parapet except the embrasures, and put a stockade round it.

1140. The expense magazines would be improvised when they were wanted?—Yes; in this case, where the magazines for the general supply of the ammunition to the battery are so handy, I think permanent expense magazines might be dispensed with.

1141. (*President.*) The Committee have seen, and they have been informed, that considerable subsidence has taken place in the main magazine; that the arches are cracked through, and this passage between the two chambers is much damaged by the cracks which have taken place; and that in order to reduce the pressure and to equalise the weight, a trench has been cut through the earthwork. Is it proposed to complete the magazine arrangements as shown on this plan, and to add the amount of earth that is shown?—Subsidence to the average depth of 2 feet 3 inches has no doubt taken place in the magazine, and cracks appeared some time ago in the arch of the passage between the two magazine chambers. The structure is, however, now quite sound, and capable of being completed, at but little cost, so as to fulfil the object for which it was constructed. Whatever additional covering may be necessary should be added in such a manner that the weight may be as equal as possible over the whole. A small quantity would be put on afterwards, if it were found that no further subsidence occurred, or that any settlement took place equally, we should repeat the operation until carried to the extent required.

1142. But from what we have seen, instead of putting more earth on, they are taking it off?—The earth that has been taken off was moved for the purpose of equalising the weight. The passage part of the structure being more solid than the magazine part, was of somewhat greater weight. Some of the earth over the passage part, was therefore taken off in order to equalise the weight. The earth was lowered at a gentle slope; there was no sudden cut.

1143. Then you consider that the plan we have before us is subject to any alteration that you may find it necessary to make, to meet the weakness of the foundation?—Yes; it would be carried out in such manner as found desirable during the progress of the work.

Isle of Grain Fort.

1144. (*President.*) In this case do you consider it advisable to make the battery *en barbette*, supposing that the Moncrieff carriages are not adopted?—Considering the level of this battery, viz., about 50 feet above high-water mark, my opinion is that it would be better to have the screen afforded by the embrasures.

1145. (*Major-General Simmons.*) Do you bear in mind also the distance, viz., 2,000 yards, from which a ship could engage the battery?—Yes; splinters of shells would disturb the working of the guns at that distance; moreover, at high water light-draught vessels could approach much nearer the work.

1146. (*President.*) It appears that the ammunition comes up by a lift from the main magazine to the level of the terreplein, and that it has to be carried down these steps to a lower level again, to go into the cartridge magazine or shell store. Is not this arrangement somewhat objectionable?—The arrangements are not yet complete. The charges of powder will be taken at once from the lift to the expense magazines between the guns on the higher level of the terreplein. The magazines with steps, to which you refer, are main shell stores, from which the shells will be taken by lifts, and thence to the expense shell stores, which are also between the guns. The expense magazines would of course be filled previous to an action.

1147. (*Major-General Simmons.*) The Committee observed, at the time of their inspection, that the lighting and ventilating arrangements in the main magazine were not perfected. Is there any idea of altering them?—The lighting and ventilating arrangements will be carried out on the most modern principles.

Garrison Point Fort.

1148. (*President.*) In the schedule of works that we have before us, Garrison Point Fort alone is included, but no remodelling of the lines eastward of the fort is apparently included. Is it intended to mount heavier guns on the sea face of the old Sheerness lines?—Yes; but that will be done on the annual estimates. There is nothing included for this purpose in the Schedule of the Fortification Act, for at the time of the Report of the Defence Commission (on whose recommenda-

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tion the new fortifications were undertaken), it was considered that the batteries on the sea lines of Sheerness were sufficiently strong; they were armed with the most powerful ordnance of that day. If you refer to paragraph 137 of the Report of the Defence Commission, you will find it stated that "the channel of approach is well covered by the fire of the existing batteries."

1149. Looking at the fort at Garrison Point, it appeared that the gorge works were not protected from the fire of a ship coming inside the Nore Light, and that very few of the guns of the battery would bear upon the ship in that position. What is proposed to be done with reference to that?—The seaward faces of Sheerness lines should be remodelled for the reception of powerful ordnance, mounted on the Moncrieff principle, in lieu of the existing armament. The part of the Lines close to the fort would be raised, and the gorge would thereby be covered.

1150. Then the supposition is that the fire from the lines would prevent a ship from taking up any position by which she could fire into the gorge of the fort?—Yes, and that part of the Lines close to the fort would act as a traverse.

1151. (*Colonel Harness.*) Are you going to raise the covering line?—Yes, that part close to Garrison Point Fort would be raised.

1152. (*Major-General Simmons.*) Is this modification of the Sheerness lines to the eastward of Garrison Fort to be carried out under the Loan Act?—No.

1153. Has any plan or estimate been made for it?—A project is now in preparation. The work would be done under a general item for altering batteries for the reception of modern armaments.

1154. It appears that Garrison Point alone, unsupported by these batteries, would be very much exposed to the fire of ships coming up the main passage near the Nore Light. Therefore it would seem to be necessary to supplement Garrison Point works by some of these batteries which have been described?—Under present circumstances, I think so, and it would be a comparatively inexpensive work, which may be submitted to Parliament in the usual way in the Annual Estimates.

1155. If the earthwork that is to be erected there is to cover Garrison Point, it must be raised to a considerable height, and must not that involve a good deal of expense?—The portion that it would be desirable to raise is small, and the work would not be expensive.

1156. (*President.*) That point has not been lost sight of?—No; I have not lost sight of it. It should, however, be observed that the object of Garrison Point Fort is to bring a close and powerful fire upon the entrance to the Medway.

1157. It would seem to be able to bring very little fire upon a ship approaching from the Nore?—It is not intended for that, but for the purpose of bringing a heavy fire to bear immediately upon the entrance to the Medway.

1158. And the attack upon ships approaching is entrusted to the lines?—Yes; I do not think it would have been a good plan, or an economical one, to extend the fort at Garrison Point in order to bring a fire to bear on the channel of approach, when so powerful a fire could be directed upon that channel from the earthworks of the Sheerness Lines. It must be borne in mind that at the time Garrison Point Fort was designed, the armament would have consisted of the same guns (68-pounders) as there are now in the Sheerness Lines.

1159. (*Colonel Harness.*) You consider that this battery was recommended to be put into its present state by the Defence Commission, for the defence of the narrow channel there?—Yes; at that time the batteries existed as they do now, and were armed with the most powerful guns of that day. These batteries of course should now be brought up to the requirements of the present day.

1160. (*Colonel Elwyn.*) And have the heaviest guns put into them?—Yes; and that can be done at a comparatively small cost. If we had extended the right flank of Garrison Point Fort for that purpose, it would have been a more expensive way of doing the work.

Cheney and Queenborough.

1161. (*Major-General Simmons.*) Have any plans been decided upon for the works on the flanks of the Queenborough lines?—The approved design provides for a work on either flank to receive a turret for two guns.

1162. Have detailed plans of the works and estimates been made?—Yes; plans and estimates. This is a plan (producing the same) for a work to receive one turret.

1163. Beyond those two works is there anything intended to be added to the intervening line?—There is no intention of adding anything permanently.

1164. What is the description of those two works?—There is a tower, covered by a glacis, to receive a turret for two guns.

1165. (*President.*) The position of the fort at Cheney is such that no ship can approach within 2,500 yards; what is the object of that work?—Its primary object is to protect the flank of the Line between Cheney and Queenborough, and to cross fire with the north-east bastion of the Sheerness Lines upon the intervening shore. Queenborough Tower will also have a bearing upon the inner defence of the river.

1166. Is it intended to mount heavy guns at Cheney?—I should say that very heavy guns would not be wanted there. A turret is proposed with a view of getting the work done at a minimum cost and of a minimum size. If Moncrieff carriages are adopted into the service, we may be enabled to suggest a still more economical plan; that is, if the cost of the turrets be taken into account.

1167. (*Major-General Simmons.*) Is it intended that these lines should be covered by inundation?—Yes; one of the objects of the line was to enable us to have an inundation without inundating the town.

1168. What depth of water will there be?—I think 2 feet 6 inches over the general surface, but the whole of the marsh is intersected with ditches.

1169. (*Major-General Dickson.*) You could inundate the country in front for some distance?—Yes.

1170. (*Major-General Simmons.*) Is there any sluice arrangement for that purpose?—No; you could inundate the country by cutting through the sea-wall.

1171. Is any sluice arrangement contemplated in connection with either of those two forts?—No; it is not considered necessary. Sluices in connection with the forts were at one time contemplated, but it was found, on calculation, that they could not flood the marshes sufficiently rapidly

when required. It is therefore intended to effect this object by breaking through the sea walls. A great portion of the flood waters can be got rid of again by deepening the breaches in the sea walls at low-water time, and the remainder through the drain pipes which pass at intervals under the main ditch and line of earthwork for the purpose of continuing the ordinary drainage of the marshes into the Fleet.

1172. Are there any estimates for the works to be provided for sluices?—No; we do not contemplate providing such works.

1173. (*President.*) I think that the principal object of these two towers is to oppose an attack from the land side?—Yes; but at the same time a certain benefit is obtained from them in respect to sea defence.

1174. There is a ditch, is there not, all the way along?—Yes.

1175. (*Major-General Dickson.*) What is the length of the line?—It is 3,400 yards. It is indented, so as to provide flank defence towards the centre, in addition to the general flank defence afforded by the work at either extremity.

Slough Fort.

1176. (*Major-General Dickson.*) There is the magazine (pointing to the plan), and the shells and the cartridges have to be conveyed all round here, whereas if you had the powder and shell at these points (describing), you would have them equally distributed, and the men might be put in the centre?—The cause of that is that the basement of the work was constructed before the arrangement that you are now suggesting, and which is now generally applied, was adopted. The arrangement shown on the drawing, is the nearest approach that can be made in this case to the present approved system.

1177. Then there is another thing, the mode of getting out the shell and the powder, the shell particularly; it seems that there would be great difficulty under this arrangement in getting the powder round to the lifts, because the men would have to travel all round here (describing on the plan) for the shell, and then they would come out at this point?—It should be observed that this is only a small work for seven comparatively light guns, and that the distances the ammunition has to be carried, are very short. I do not apprehend there would be any difficulty in supplying ammunition to the guns as rapidly as required.

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1178. Here is the shell lift (pointing to the plan). How will a man get to it?—The shell would be passed to him through the shell hatch.

1179. Would it not be better to have a doorway?—It would, I think, be better to retain the smaller opening. If you have a hatch you put the shells upon a truck, and run them through it.

1180. (*Major-General Simmons.*) It is a very low and narrow hatch. Would it not be better to make it into a doorway?—I think that, on the whole it is better that it should remain as a hatch.

1181. There is a similar inconvenient arrangement to be observed here (pointing to the plan) to get the powder through this hatch. If there was a door-way there it would be more convenient?—The powder would be passed by a man inside the magazine, through the hatch, to another man in the passage outside, as is done on board ship, and as the hatch would be shut, except when powder was being passed through, I think this arrangement would be safest, and would not be found inconvenient.

1182. Looking at the defence of this gorge (pointing to the plan), would it not be advisable to have some better protection for the gateway in the shape of a drop-ditch and a little drawbridge?—There would be additional security if there was a drop; there is, however, now a machicoulis gallery.

1183. It would make it rather more complete? Yes; I think the gateway should be thoroughly protected.

1184. (*President.*) You will be good enough to have these plans completed, and take into consideration the points to which your attention has been drawn?—Yes.

Coalhouse Fort.

1185. (*Mr. Hawkshaw.*) In the section of the curved iron superstructure no tie appears to be shown; but it would be safe and easy to introduce one?—Yes; the question has been considered. Our first design had a tie, but it was found to interfere somewhat with the racers. It was therefore omitted, and it is considered that the structure as now designed does not need one.

The witness withdrew.

Captain Herbert Siborne, R.E., examined.

1186. (*President.*) How long have you been employed on the works constructed under the Loan Act?—Ever since 1860.

1187. From the time when the works were first commenced?—Yes.

Hoo and Darnet.

1188. Have the plans with regard to Hoo and Darnet passed through your hands?—Yes; I have been connected with them, under Colonel Jervois, from the beginning.

1189. (*Major-General Simmons.*) Have you any fixed rules to guide you in determining the thickness to be placed upon arches over casemates, to render them bomb-proof?—I should say that 3 feet of brickwork and 3 feet of concrete would resist any shell, and this is confirmed by experiments which have been carried out in Germany.

1190. With what spans do you mean?—With arches of 20 feet span.

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1191. With what radius of curvature?—11 or 12 feet.

1192. According to the plans on the table, it appears that the gun casemates at Hoo and Darnet are protected by only 18 inches of brickwork and 2 feet 3 inches of concrete?—The rear portions of the casemates have only that protection.

1193. Do you consider that sufficient to render them bomb-proof?—They are bomb-proof immediately over the guns, but not in rear of them. It is an object to save as much weight as possible in these forts, and it is a question whether they will ever be subjected to vertical fire. If considered necessary, a covering of earth may be added at any time. I have always acted on the principle of making the magazines secure in the

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first instance. There is a total thickness of 6 feet of arch and concrete at the weakest point, over the magazines.

1194. They are protected by 18 inches of brickwork, and 6 feet of concrete?—Where that section is taken, they are.

1195. Do you consider that that is as strong as 3 feet of brickwork with 3 feet of concrete?—Nearly so, because the arches are narrow.

1196. According to the plans, these arches appear to have 18 feet of span, which is nearly the dimension before stated as requiring 3 feet of brickwork and 3 feet of concrete. Under those circumstances, do you consider that 18 inches of brickwork and 4 feet 6 inches of concrete would afford sufficient strength?—Six feet of brickwork and concrete, I should say, would give amply sufficient strength. The thickness of arch varies, some of the casemates having been in the previous designs intended for other than magazine purposes. The average thickness of arch is 2 feet 3 inches, and the section shows the weakest arches. It was necessary to work these in with the new design.

1197. Where is any record to be found of the experiments in Germany to which you have referred?—I do not know that we have any record, but my recollection is that of a letter which I heard read, written by a Prussian officer of Engineers, containing the statement which I have repeated. He spoke of 3 feet of brickwork and 3 feet of concrete as being ample against a 13-inch shell, and that I consider would give perfect safety.

1198. (*Major-General Dickson.*) Is not this part (pointing to the plan) that covers the magazine liable to be exposed to direct fire as well as vertical fire?—Direct fire upon it would not go into it at such a slope as that.

1199. (*President.*) In some of the designs I have seen an iron plate introduced; is it considered that that adds to the power of resistance?—I think that that was with reference to the glacis of turrets. I never knew that it was proposed for magazines.

1200. Do you consider that a thin plate of iron over the concrete would assist in breaking up a shell?—I should say that it would.

The witness withdrew.

(*Adjourned till Tuesday next, at half-past* 11 *o'clock.*)

Tuesday, 7th July, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Captain HERBERT SIBORNE, R.E., further examined.

COALHOUSE FORT.

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1201. (*President.*) Will you have the kindness to explain to the Committee the changes which have been made in the plan on the table, as compared with the original plan. I understand that the concrete foundation was made upon a plan different from that now before the Committee?—Yes; in the original plan it was intended that the gorge of the work should be closed by an earthen rampart, which should also act as cover to the large main magazine in this angle (pointing to the plan). The rampart was to be retained by a revêtment wall towards the interior of the work. To carry out this idea the foundations were drawn in the way shown. We found afterwards that owing to the nature of the soil, it was impossible to have a large heavy rampart with a wet ditch in front of it, and it was consequently abandoned. When we came to the present design we were obliged to make use of the foundations as constructed, as they had been very expensive, and we utilized them in the best way we could, and designed the works accordingly.

1202. The alteration in the plan was not made till after the concrete foundations had been put in?—No.

1203. The ditch shown on this plan is the ditch of the old fort, is it not?—Yes; it is now abandoned.

1204. On both plans, I believe, it was to have been filled up?—No; it was to have been pushed further out in the first design, as it was too close to the rampart. It is now intended to fill up that gorge ditch entirely, and to have a ditch round the glacis in front of the work which is shown here (pointing to the plan). Here is a general section through the work, showing the gorge buildings, the casemates, the glacis, and the ditch in front of it (pointing to the same).

1205. Will the gorge buildings be protected from fire over the iron fort?—They are of the same height as the buildings in front.

1206. That is to say a shot passing over the top of the fort will strike the top of the gorge buildings?—It must necessarily do so, if it comes at an angle of depression, because of the distance which intervenes between the two.

1207. How far did the concrete foundation extend beyond the wall of the fort upon which the iron structure was to rest?—It was intended to be 9 feet to the inside of the piling. I believe there was some irregularity in carrying out the work.

1208. It is not intended to add any weight outside of the fort; the weight of the glacis will be carried further out?—The section of the glacis is shown here (pointing to the plan); the dry ditch will be 12 feet wide, which will take the outside of the ditch 3 feet beyond the edge of the

concrete. The inner slope of the glacis is 1½ to 1; it removes the weight of the glacis at its crest to this point (pointing to the section).

1209. Do you apprehend that that weight of the glacis will have any effect in depressing the bed of concrete?—Certainly not, on the concrete.

1210. You do not think it will affect the concrete?—No; the only question is whether it would affect the earth here (pointing to the section). I should think that it will tend to keep the earth against the piling.

1211. (*Mr. Hawkshaw.*) It will go down as well as well as push out laterally?—Yes; but you must make the glacis good again.

1212. (*President.*) What is the depth of the outer ditch?—The depth from the ground line to the bottom is 8 feet; then you would secure about 7 feet of water in it.

1213. Do you apprehend any difficulty in that part of the construction?—No; the ditch is 220 feet from the face of the work.

1214. (*Major-General Simmons.*) When was the first design for this fort under the Loan Act made?—In 1860.

1215. When was the work commenced?—It was commenced in quarter ending September 1861.

1216. When was it decided to alter the design of the gorge?—When the designs for the basement came to be worked out.

1217. What were the reasons that led you to abandon the trace of the gorge?—There were two reasons, and one was that we could not have this great earthen rampart here (pointing to the plan), because the ground would not stand it. In excavating for the foundations so as to allow a thickness of 14 feet of concrete, we saw the sort of soil that we had to deal with, and gave up the idea of having a large rampart with a wet ditch outside of it.

1218. Are the Committee to understand that the excavation for the concrete at the gorge was 14 feet in depth?—Yes; it was carried all round the work with the same thickness, we expected to have a very heavy weight in this magazine (pointing to the plan), and in the retaining wall of the rampart.

1219. When you had excavated down to a depth of 14 feet, was there not a sufficient indication in the nature of the excavation to induce you to think it would be necessary to abandon that place?—We knew that we could always utilize the foundations as they were (pointing to the plan).

1220. The trace of the work, as it stands now, appears not well adapted to close the gorge of that work; the flank defence appears very imperfect, and the buildings are in an intricate form?—Supposing the gorge to be traced in straight lines, as you have suggested, it would then be well flanked by the double row of loopholes in the casemates at each end. These lines are now indented, new flanks being thus formed, which are well supplied with loopholes, and as the original flank defences are retained, the defence of the gorge has been greatly increased by the alteration. Supposing, moreover, that we had ventured, after the excavation had been made, to alter the trace, we should have had then, on one side of this piling (describing), a great excavation with nothing but made earth in it, and we should never have held the pilings of the new foundations in their place.

1221 When the officer on the spot saw the nature of the excavation, was not that the time to alter the trace, instead of waiting till the concrete was put in?—I was mentioning just now that there were two reasons for abandoning the original form of the gorge. In the first place, there was the question of the rampart: and, secondly, that of removing the main magazine, and placing it under the gun casemates, according to the new system. Therefore we were not bound solely by the question of the rampart. We had gone to considerable expense in excavating, and in piling all round here (pointing to the plan); and we knew that we could always utilize the foundations with a simple wall, and we knew that we should want them to carry a wall for the defence of the gorge. It should be remembered that in abandoning the excavations, you abandon the expensive piling also.

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1222. In the original design, the flank defence was provided for in front of the fort?—Yes; by caponnières.

1223. Is the present front flanked in any way?—No; we depend for the defence of the front upon the ditch, and the guns in the casemates. You would also have torpedoes in the ditch and glacis.

1224. For what number of officers and men is accommodation provided in the gorge buildings as barracks?—There is accommodation for about 150 men. In war time you always place any number you like in the casemates for immediate service.

1225. They are two-storied buildings, are they not?—Yes.

1226. Do they contain officers' rooms and married soldiers' quarters?—Yes; and there is also a hospital and a canteen.

1227. Washing-rooms and laundries?—Yes.

1228. Do you think it advisable, considering the unhealthy nature of the district, that married soldiers' quarters, and all those appliances, should be provided in the fort?—If you have a garrison in a place like that, for several months in time of war, they must of course be supplied with these accessories.

1229. Do you not think that a few care-takers, with quarters provided for them in a time of peace, would be sufficient for the occupation of a work like that?—I do not suppose that anybody would hurt the work itself, if you had only two or three men looking after it; but that would not suffice for the security of the guns and ammunition.

1230. In a time of war there would always be the gun casemates available for a full complement of gunners?—Yes.

1231. What number of gun casemates will there be?—There would be casemates for 28 guns. They are in one continuous battery, but might be partitioned off.

1232. Would not those casemates be sufficient to contain the whole garrison in a time of war, if hammocks were slung as on board ship, and would not the men then be better off than their comrades in tents?—They are intended to accommodate the full complement of men on emergencies; but during a war of several months' duration, it is advisable to have a small portion of the garrison, who would be left permanently in charge of it, more comfortably housed.

1233. Would it not reduce the expenditure on the fort very much, if the gorge were enclosed in some more simple way than by the buildings, and if provision were made to accommodate the garrison in the gun casemates?—Very little indeed.

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You must have the outer wall to enclose the fort. The buildings are of a light description, and the majority of them consist of those accessories which are necessary for the garrison, wherever they may be accommodated. In time of war you would always have to keep up a garrison of about 200 men in the fort. In the case of an enemy being expected up the Thames, you would at once send down men to fill up the full complement of the garrison, and these you would put into the casemates.

1234. You must keep 200 or 300 men there during war in the gun casemates, and would they not be better off than their comrades in tents?—Yes; but as I said before, there would be little additional expense in keeping them in good barrack rooms, a great object in such a situation.

1235. Have you visited Coalhouse Fort?—Yes.

1236. Is there not a village close by, where a large number of men could be billetted?—I do not know that a large number of men could be billetted there.

1237. (*Colonel Harness.*) What depth of water will there be in the exterior ditch?—About 7 feet.

1238. Would the superior slope of the glacis meet the surface of the water?—No; there is a berm of 5 feet.

1239. Would a person crossing that ditch be exposed to direct fire from the fort?—Yes, from the guns.

1240. (*Major-General Simmons.*) All heavy guns?—Yes.

1241. From what position could musketry be fired?—You might place a light parapet for musketry on the top of the fort.

1242. It would appear that the heavy guns which were intended to be used against shipping are hardly calculated for the defence of the glacis at a few yards distance?—In the first place, there would appear to be a very remote probability of an enemy landing in the teeth of those batteries to run into the fort up the glacis. In the next place, a ditch 60 feet wide, with 7 feet of water in it, and studded with torpedoes, would be a very difficult obstacle to overcome, particularly under the fire of case shot from such heavy guns.

1243. (*President.*) Has a well been sunk at this fort?—Yes, at this point (describing).

1244. How is the water supplied?—It is supplied by a pipe which conveys it into a tank just outside the fort.

1245. Where would the men be when pumping the water?—Inside the fort.

1246. (*Major-General Simmons.*) Has this plan, with the advanced ditch, ever been submitted to the Commanding Engineer at the station for his opinion?—No, it has only been recently prepared.

1247. I believe it was stated in evidence by him that he had never seen the plan of the casemates till after the contract was let for the work to be done under the present contract; when were the plans sent down?—The plans for the casemates are not yet decided on.

1248. The answers which you have given fully account for the Commanding Engineer not having mentioned to the Committee that there was any intention to make the advanced ditch?—Yes.

1249. Did you make the original design in 1860 for this work?—Yes; under Colonel Jervois' instructions.

1250. Had you then examined the works of the fort that existed previously?—Yes.

1251. Were there no indications in that fort that led you to doubt the practicability of making this heavy work in the gorge with an open ditch?—No; there were no heavy parapets in that old fort; the relief was very small.

1252. (*President.*) Were the cracks that are now evident in the officer's quarters visible at that time?—Yes, they were. They were accounted for by the fact of the building standing partly over an old foundation.

1253. (*Colonel Harness.*) You close the interval between the ditch and the fort at the ends of the ditch?—Yes, with an embankment.

1254. (*President.*) There is a provision for musketry fire from the gorge?—The gorge walls are cut up with windows, having steel shutters with loopholes, and loopholes in the walls themselves; in fact, it is one mass of loopholes; it is a double storey.

1255. Has the question of the cost of this fort come into your hands at all?—It has necessarily come partly into my hands, as the design must be adapted to the money available.

1256. It is stated that the present contract for the gorge buildings was 17,400*l.*; would that complete the gorge buildings?—The present contract is for 26,500*l.*, but that sum provides for the completion of the basement as well as the gorge buildings.

1257. That is part of the same contract?—Yes.

1258. (*Major-General Simmons.*) And the earthwork too?—No.

1259. (*President.*) Has any estimate been made of what the cost of the iron superstructure will be?—The design not having been decided upon in detail, it would only be approximate.

1260. Do you remember what the cost per gun will be of the iron fort at Plymouth Breakwater?—It is about 3,000*l.* a gun.

1261. (*Mr. Hawkshaw.*) What is this blue dotted line on the plan; does it represent the line of the iron structure?—Yes, it does.

1262. There is a considerable portion of this part of the fort that you put this iron structure over; is that the addition you propose to make?—No, that is already built.

1263. Is this part built (pointing to the plan)?—Yes, this is the old work; the new work commences there (describing); this is not the same section; you will see that the old portion of the work is different.

1264. I should like to see that, because if that has been constructed like this, it would not carry that weight?—This shows a section of that arch, which is very strong (pointing to the same); the stone curb for the ironwork comes about here (describing). I think you will find it equally as strong as the other portion of the work.

1265. Is this plan that is laid before the Committee to be adopted?—As far as the basement is concerned, it is the plan.

1266. As to the ironwork, is it the plan?—It is merely an outline of what the ironwork is intended to be.

1267. (*President.*) Is the position which that is to occupy decided upon?—It is decided upon so far as to enable us to provide for its foundation on the basement.

1268. (*Major-General Simmons.*) Has your design for the basement been made with reference to the iron superstructure shown in that plan?—Yes.

SHORNMEAD.

1269. (*Major-General Simmons.*) Is it intended to construct a barrack in the gorge of the work at Shornmead?—There is already a barrack, and it is proposed to enlarge it to some extent, to meet the new requirements of the garrison.

1270. Would not gun casemates in this fort, the same as in Coalhouse, be available for barrack accommodation for a temporary purpose during war?—No doubt they would; but when you have got a fort like this, with guns aud ammunition in it, you must have provision made for a small force of about 100 men as a constant garrison in war time until the moment of attack.

1271. If you could place the men in casemates they would be just as well off there as their comrades in tents?—Yes.

1272. (*President.*) Your idea is that, in addition to the garrison required to fight the guns, you must have a more permanent garrison, and therefore it would be necessary to make provision in the gorge buildings?—Yes. As I have already stated, these gorge buildings contain, comparatively speaking, but little provision for housing the men, but consist chiefly of the necessary accessories, such as hospitals, canteens, latrines' wash-houses, &c. The gorge wall itself must be constructed, whether you have buildings attached to it or not.

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1273. Do you think that a garrison would live in the casemates?—Yes, in a time of war, when it has its full complement of men on emergencies; but then we have, in addition to that in the gorge, all the accessory buildings, and a few barrack-rooms for a small permanent garrison to look after the guns and ammunition.

1274. From a marshy position like this, sick men would surely be sent away to permanent barracks, such as there are at Gravesend, within a distance of two or three miles; and it would therefore hardly be necessary to provide an hospital when one could be reached within so short a distance?—Supposing there was an attack made upon the fort, you must have at least a place to put the wounded men in for a short time; and there is only one small ward in all this fort, to hold about eight or ten men.

1275. (*Colonel Elwyn.*) What accommodation does the present barrack afford at Shornmead?—About 100 men.

The witness withdrew.

(*Adjourned sine die.*)

Tuesday, 28th July, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel W. F. D. JERVOIS, C.B., R.E., further examined.

CORK HARBOUR DEFENCES.

SPIKE ISLAND.

1276. (*Major-General Simmons.*) Will you be kind enough to explain the nature of the works, or rather the modifications which it is intended to make at Fort Westmoreland, in Spike Island, and how the guns are intended to be mounted?—The only works intended at Spike Island are the re-modelling of most of the faces and flanks of the ramparts bearing upon the harbour and the channel between Camden Fort and Carlisle Fort. The original intention was to mount modern guns on dwarf traversing platforms, to fire through embrasures, but in this, as in all other cases of the same description, it is now a question whether the Moncrieff carriage should not be adopted, and embrasures dispensed with. The intention is to carry the work up to a certain level in such a manner that it will be capable of being adapted either to one system or the other; probably by the time we get to that level, the Artillery authorities will have determined whether the Moncrieff carriage is to be adopted in the Service.

1277. You have stated that one of the principal objects of the modifications was to bring the fire of the guns from such faces as bear upon the entrance to the harbour?—The guns are to bear both upon the entrance channel and on the harbour itself.

1278. A large portion of one of the fronts which seems to have a most important bearing upon the defence appears not to be re-modelled at all, or at least is only partially re-modelled. Would it not be advisable, there being such a good site for guns, to place guns on that site (pointing to the plan) likewise?—It would no doubt afford an additional amount of fire. It is only a matter of degree. That face may, of course, be remodelled like all the others.

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1279. When such a vast amount of expense has been incurred in other places to make an artifical foundation to carry guns, does it not seem advisable, where a foundation already exists, and a natural site presents itself, to take the greatest advantage of it?—Additional guns on the face referred to would perhaps be advisable. Nothing is being done that would prevent such addition being made.

1280. It would appear that that face (pointing to the plan) has even a more important bearing upon defence than the land front that is about to be re-modelled?—I think they both bear about equally upon the channel.

1281. This does not (pointing to the plan); that is one (pointing to the same) that has been re-modelled, and these two (pointing to the same) have also been re-modelled?—Guns mounted on the curtain which you allude to would afford additional fire, of the same amount as the fire of

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the corresponding curtain on the southern part of the work. There can be no question that guns on the curtain you refer to would add so much of artillery fire upon the channel.

1282. And in a very important position?—Yes; but it is an addition that may be made at any time, if desired.

1283. Some of the expense magazines have been constructed on the terreplein of the batteries; do you think it would be attended with advantage if those which have not been constructed were placed underneath with lifts, so as to bring the ammunition up to the guns (explaining on the plan to the witness)?—That is a point that it would be desirable to look into; the plans for the expense magazines which have been already constructed were made many years ago.

1284. (*President.*) You have stated that this is a work in which you think the Moncrieff carriage might advantageously be applied, if it is adopted, and that you do not propose to carry the works beyond a certain point at the present time?—Yes.

1285. Is it proposed to form a parapet leaving the embrasures uncut, or to stop short of the parapet altogether?—The proposition would be to stop short of the parapet, so as to leave us the option of constructing it in the way you see shown on this plan (pointing to the same), or of making it of a form to receive Moncrieff gun carriages,—thus (pointing to the plan).

1286. (*Colonel Harness.*) If you adopt the Moncrieff carriage, will you raise the crest or lower the terreplein?—I think in this case I would rather raise the crest; it would be merely making the parapet higher.

1287. (*President.*) Would there not be an advantage in making the parapet solid in the first place, so that it should have time to become firm, and then to cut out what was necessary afterwards?—We very often do that for embrasures.

1288. (*Major-General Simmons.*) Do you think that Moncrieff carriages would be necessary in that position (pointing to the plan), considering that the terreplein of that battery is 115 feet above the sea, and 400 yards distant from the nearest position which ships could take up with reference to it?—The adoption of the Moncrieff carriage would, no doubt, be preferable to having the guns *en barbette;* but this is just one of the cases in which it would be less objectionable to have them *en barbette* than in many others. You might in this case put the guns *en barbette* if Moncrieff carriages were not available.

1289. (*President.*) If this is a case in which a barbette battery without the Moncrieff carriage might be adopted, is not that a stronger reason for completing the parapets, and leaving them for a time to become solid?—Whether the ordinary barbette system, or the Moncrieff system be adopted, the parapets, when constructed would be formed of a solid mass.

1290. Upon the whole you think it preferable in this instance to stop short, and not go above that height?—The instruction sent to the station, is not to proceed beyond a point which is common to both plans.

1291. (*Colonel Harness.*) You have not decided on using embrasures?—No; the battery is to stop short at a point that is common to any plan that may be adopted. There is a concrete foundation on which you may either put the guns in embrasures, or mount them on the ordinary *en barbette* system, or on the Moncrieff carriage.

1292. (*President.*) You would not carry the work higher than the level of the racers?—Certainly not, at the present time. The expense magazines would be common to all plans.

1293. (*Major-General Simmons.*) Do not you think it would be advantageous to abandon the cutting of stone in the magazines, especially where a part of it is afterwards buried in the earthwork?—If that is being done, as it appears to be from your question, it is entirely wrong. The executive officer should use his judgment in such a matter. There is obviously no use in using cut stone in work that is to be covered up.

1294. (*Major-General Dickson.*) With regard to the magazine accommodation, the great magazine for the place is being re-modelled?—Yes; but that will come in as a separate item. I do not think it was originally contemplated.

1295. ((*Major-General Simmons.*) It is not included in the Loan Act?—No.

1296. (*Major-General Dickson.*) I presume, if it is re-modelled, that the new magazine will contain all the conveniences that are adopted in new works?—Yes.

1297. (*Colonel Elwyn.*) We saw no arrangement for side-arm sheds. What arrangements are to be made for artillery stores on Spike Island?—They will be provided on the same principle that I was explaining on a former occasion for the Southsea Batteries, and in accordance with the plans that we are adopting for batteries generally.

1298. (*President.*) In short, they are to be re-modelled in accordance with the latest plans?—Yes.

1299. It appears that in some of the forts in Milford Haven, long boxes are being supplied for the side-arms, levers, sponges, ramrods, handspikes, and so on, which would be a very inconvenient arrangement for serving the guns on an emergency?—I think these must have been supplied owing to there being a deficiency of building space near the batteries for the ordinary side-arm sheds.

1300. (*Major-General Simmons.*) Would it not have been more convenient to apply the same amount of wood in a shed with supports, and hooks on these supports, under the roof?—I have heard many Artillery officers say that they rather like these boxes, although they are not now the regulation; they are exceptional.

1301. Quite exceptional to what you have described as the intended arrangement for fortresses generally?—Yes: I think they were supplied on some special requisition.

Carlisle Fort.

1302. (*President.*) Is this the plan which lies before me which is being carried out in Cork Harbour?—As to some parts it is, but as to others it is not.

1303. Is there any complete approved plan of Carlisle Fort in existence?—Not as it is now proposed to complete the work.

1304. (*Major-General Simmons.*) On what basis are the Committee to judge of the expenditure necessary to complete the fort?—I think you should take first what has been expended. Then add the probable expense for completing those sea batteries which have already been ordered and are in progress. Further sums must be added for a portion of sea wall (which is now necessary for the maintenance of those batteries against the encroachment of the sea) and for such flank defences

as are necessary for the ditch of the land front. This sea-wall was not included in the original estimate. So far as other parts of the plan are concerned, the intention is to carry them out according to the funds available upon the estimate. We shall have a very good defence towards the land when the flanks to the ditch are done. This will cut off the sea batteries against a land attack, and the sea batteries when completed will afford the sea defence. If the original plan were carried out in its integrity, there would be an excess of estimate, owing to the withdrawal of convict labour.

1305. The lower tier of batteries facing the Channel being at a height, if I remember rightly, of about 80 feet, or varying from 66 feet to 90 feet, has behind it great banks of spoil composed of stone; do you not think, therefore, that those batteries will be worked under very great disadvantages from splinters of shells and stones being thrown among the gunners?—That is a difficulty which is due to the site, and one which is met, as far as possible, by a wall immediately behind the batteries, of such a height as would catch splinters of shells bursting against the hill in the rear.

1306. Is it not proposed to place iron shields in those embrasures at that height?—I should say that this is another of the cases in which it would be desirable to apply the Moncrieff carriage, and thus render the provision of iron shields unnecessary.

1307. Looking at the great risk and doubt whether a wall, such as you have described, would stop the splinters of shells, would it not be advisable to spend any money that might be available for the work in making these batteries splinter-proof, rather than to build extensive casemates as permanent barracks within the fort, considering also that splinter-proof batteries would afford very good accommodation for the gunners close to the guns?—If it be desired to construct casemates to cover the guns, iron shields would have to be applied round the embrazures.

1308. Casemates would probably render iron shields necessary?—Yes; and you thus get into a much more expensive construction, which, though necessary in many cases, does not seem requisite in this. You get into a mode of construction somewhat like that at Hurst Castle, for instance.

1309. I should think hardly so expensive as that?—Perhaps not so expensive as that. The conditions certainly are not similar.

1310. The Committee also observed that the gunners stationed in the casemates in the keep would be a very long way off from the batteries; and that, considering the extreme difficulty of moving over the very rough and precipitous ground, it would take a very considerable time, probably half an hour, before those batteries could be manned from there. It seems desirable, therefore, that some provision should be made for placing the gunners under cover closer to the guns?—You might, no doubt, in this case, have some inexpensive cover in the intervals between the batteries. This would of course be a very different thing from incurring the expense of a casemated battery such as I before referred to.

1311. (*Major-General Dickson.*) But there would be the advantage in a splinter-proof battery of having, at the same time, a covering for the men working the guns?—Yes, and there is nothing done to prevent our providing such cover in this case.

1312. (*Major-General Simmons.*) The South Batteries appear not yet to be commenced?—No.

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1313. Do you think that some of the expense of excavating a plateau for that battery, and constructing it in that position might be saved by planting guns on the existing plateaux slightly higher in rear of the right face of the right bastion, near Prince Rupert's Tower, which would give you the same number of guns to fire on those parts of the channel, on which their fire is to be brought?—You might put guns in that position, but they would not be so well placed as on the knoll, which it is proposed to occupy by the South Battery.

1314. That South Battery appears to be subject to the same defect as the others, having behind it a great mass of broken stone, whereas the others would be free from that objection?—It is intended to lower that mass down, and make it so that it would not be objectionable. I do not think that any site would be so good for the purpose of commanding the approach to the harbour and offing as the South Battery. The batteries numbers 1, 2, 3, and 4, generally command the channel, but you want the South Battery to see, as it were, round the corner, and fire in that direction (describing on the plan).

1315. (*President.*) Are the Committee to understand that the question of the Keep is under consideration, and that the money that will be laid out will be applied in the most economical way to obtain the protection required?—Yes.

1316. (*Mr. Hawkshaw.*) Did you say that it might be assumed that the money remaining will be made to suffice for the works yet to be determined upon?—It will be made to suffice for the most necessary works, *i.e.*, the batteries and remodelling of the keeps, together with the requisite accessory services.

1317. You have said that the estimate would be exceeded in consequence of the withdrawal of convict labour?—Yes, that is if we carry out the plan in its integrity, as here shown (so far as this represents what has been approved), there would be an excess consequent upon the withdrawal of convict labour.

1318. May we assume that the money which remains will suffice to execute the works yet to be constructed?—The funds that remain available will permit of the completion of all that it is now necessary to do, except the casemates in the keep and the building up of some parts of the escarp and counterscarp where a masonry facing is wanted, the flanking galleries and the sea-wall.

1319. (*President.*) In your report, dated February 1867, it is stated that the amount required, irrespectively of iron shields, for the three forts—Camden, Carlisle, and Spike Island, is 159,000*l.* Is it probable that those forts will be completed for that sum now?—I have just now said that if the work is carried out in its integrity, according to the plan first contemplated, the withdrawal of convict labour would cause an excess upon that sum. It is stated in paragraph 107 of my report of February 1867, that convict labour was calculated upon.

1320. Is it intended to reduce the works so as to bring the expenditure within that estimate?—There are two alternatives—one is to reduce the works, so as to bring the expenditure within that estimate; and the other is, to increase the total estimate in the schedule of the next Fortification Act.

1321. That, I suppose, will not be decided upon

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until the question of re-modelling the keep has been gone into?—No; but probably the first alternative may be preferred.

1322. (*Major-General Simmons.*) Can you lay before the Committee the original estimate, in order that they may know to what extent convict labour was provided for in that estimate?—I do not know that there was any detailed estimate, showing the extent to which it was proposed to provide convict labour, as we never had any distinct statement of the extent to which we should obtain that labour; but generally I have thought that we should get about one-third of the labour done by convicts, and to that extent there would not be any charge at all for work.

1323. (*Colonel Harness.*) That is to say, one-third of the work would be done for nothing?—Yes; so far as labour is concerned; the only cost would be the materials and the tools for applying the labour.

1324. Then your estimate would require to be increased by one-half, if the convict labour was not given on the works?—Yes. I am now speaking generally.

1325. (*Major-General Simmons.*) You would deduct from that sum an allowance for plant?—Yes; which of course would be common to both.

1326. Is it intended to make a second keep upon the site of Prince Rupert's Tower?—There have been several plans proposed for having a keep at Prince Rupert's Tower, in order to command ground which would not be seen from the main keep.

1327. Considering the immense obstacle that has been raised between the land side and the sea batteries by that great ditch that is in front of the keep, is it at all necessary to have a keep of that sort?—There is a tower already existing, and I think that if funds were available, it would be advisable to add to it in such manner as to provide musketry fire in a position secure against assault to sweep ground not commanded by the main keep. A light gun mounted on the Moncrieff principle might also be placed upon the old tower.

1328. (*President.*) Some expense would have to be incurred in improving the flank defences of the ditch?—Yes; flanking galleries and caponiers are required in the ditch to see portions of the ditch which are unseen from the rampart.

1329. (*Major-General Simmons.*) Considering that the ground is so thoroughly commanded in front of the ditch, is it advisable, remembering the small sum that you have to complete this work, to spend it upon flank defences in the ditch before you complete your sea batteries?—I think the sea batteries should take precedence of the flanks in the ditch to which you refer.

1330. (*Colonel Harness.*) Are you not necessarily delayed in the sea batteries in consequence of the doubtful position of the question as to artillery?—We have been much delayed at different times in the construction of sea batteries by the transition state of artillery questions during the last few years. We avoid as much as possible executing work which would be rendered unavailable by changes in artillery matériel.

1331. Does any such reason apply to your delaying the land defences?—No; the delay there has been caused by the intermittent way in which we have got labour.

1332. (*President.*) Are the Committee to understand that the sea batteries will not be delayed by any considerations with reference to the flank defences of the ditch—that you will not cut off any of the labour or material required to complete the sea batteries, in order to save the money for the keep or the defence of the ditch?—Certainly, I would not.

1333. (*Major-General Simmons.*) Considering that out of the 79,000*l.* presented as the estimate for Carlisle Fort in the papers laid before Parliament, about 29,000*l.* have been already expended, is it not advisable to complete the sea defences entirely before any casemates or any additional works are undertaken?—I think that that would be the best course, and it is that which is now being adopted.

1334. So as to accomplish the primary object of the work, viz., the defence of the channel?—I think that at the time the work was commenced it was right to do the land line first, because we already had a certain amount of sea batteries, according to the requirements of the day, and there was no proper land defence at that time.

1335. (*Colonel Harness.*) Would not the first object naturally be, if there is a site which offers itself in a good position, to make that ground securely your own?—Yes.

1336. Does not that necessarily lead you to make a secure line of defence against the country, to landward?—Yes; that was the principle on which we acted.

1337. And you adhere to that?—Yes; and having done so, I think we should proceed,—as we have for some time been proceeding,—with the sea batteries required to oppose such naval attack as might be made upon the harbour at the present day.

1338. With regard to the keep, do you not think that if you had a land line presenting a good obstacle, such as a good scarp with good flank defences, you would be able to hold that line with a smaller garrison with a keep than without one?—Certainly; one of the objects of the keep is, to be able to hold the work with a small garrison; one condition of the keep should be that it commands the whole interior of the work—that main keep does not of itself quite command the whole of the space within the line of land defence.

1339. The keep is designed to command a large portion of it?—Yes; it commands by far the greater part of it. In fact it does so in its present state, although on a somewhat antiquated plan.

1340. That keep is not a new construction?—No; we found it there, and we took advantage of it. It is an old work.

1341. Do you remember what the estimate for the completion of the work at Carlisle Fort is?—The estimate for completing all that you see in this drawing, which has been furnished from the station, (exclusive of the sea-wall) is, in round numbers, 105,000*l.*

1342. (*President.*) The estimate given here is 79,000*l.*?—Yes, but that was on the supposition that convict labour would be available for part of the works. The convicts that were employed on this work have been withdrawn. I think I see my way, however, to deductions on that 105,000*l.* to the extent of 13,000*l.* or 14,000*l.*, so as to reduce the excess to 11,000*l.* or 12,000*l.*

1343. Is that upon the supposition that you will have convict labour or not?—It is upon the supposition that the work is done by military or civil labour.

1344. (*Major-General Simmons.*) According to the estimate furnished by the Commanding Royal Engineer on the spot, it appears that the total

proposed expenditure on Carlisle Fort is 114,500*l.*, in addition to the expenditure which has already taken place, making the total cost 143,000*l.*, which appears to be 64,000*l.* in excess of the Parliamentary estimate?—In that estimate of 143,000*l.* furnished by the Commanding Royal Engineer, several items are included which it is not intended to execute. There is an item of 15,000*l.* for a new battery which forms no part of the fort, and which it it has never yet been proposed to carry out. There is another item of 4,000*l.* for re-modelling the existing batteries, and this forms no part of the approved plan. Again, a sum of 25,000*l.* is proposed for a sea-wall, and it is only at present proposed, if funds are available, to expend 5,000*l.* in constructing that part which is immediately required to protect two of the lower batteries from the action of the sea. Further, the works in the keep which are provided for in the estimate furnished by the Commanding Royal Engineer are much more extensive than necessary, and their cost, which is stated to be 19,700*l.*, may very well be reduced to 8,000*l.* Further reductions, amounting to about 2,000*l.* may be made on other items, and thus the total cost would be reduced to 90,000*l.* or 91,000*l.*

	£	£
		143,000
Deduct—		
New Battery	15,000	
Re-modelling Old Battery	4,000	
Sea Wall	20,000	
Keep	11,700	
Other Services	2,000	
		52,000
		£91,000

1345. It is given as a statement of the probable expenditure on Carlisle Fort?—As a general rule, it would not be safe to accept estimates from a station which have not been approved by the War Office, because it may be proposed to execute works which would not be approved at head-quarters.

1346. Of that 143,000*l.*, I see that 15,000*l.* is put down as the estimate for a battery at Roche's Point?—Yes; and that is an entirely new work which forms no part of Carlisle Fort, and which it has never yet been contemplated to execute. I think the insertion of it in the estimate must have arisen from my having observed, when last visiting the works, that Roche's Point is a good site for a battery.

1347. Is it proposed to make any arrangement for the supply of water in the works at Carlisle Fort? There is a very good spring, I believe, on the lower level, but no means of getting the water up to the higher level, and no means of flushing the drains?—A large underground tank is about to be constructed on the upper parade, and as you observe, there is a good spring on the lower level.

1348. It seems very desirable that there should be a small engine, both at this fort and at Camden, to raise sea water for flushing purposes, and fresh water for drinking purposes?—Yes; that would be the most economical way of managing it.

1349. It appears from the design that it is intended to raise the terreplein of the North Battery considerably above the level of the ground at that spot; and considering the height, 240 feet, that that battery is above the sea, it appears unnecessary to go to the expense of raising that platform, but merely to place the guns on an emplacement on the level of the ground?—That is what is intended to be done. This plan has not been examined or approved, the intention is to do the work. There is no sum included in the estimate for a battery on that site, but if it were executed, the principle you are now recommending would be followed.

1350. Would it be necessary to construct this bastionette at the keep, considering that by removing the present bastion the ground would be perfectly flanked?—It is the intention to make use of the present keep as much as possible. The object of the bastionette is to flank the faces of the bastions on either side, but probably this object may be attained by retaining a part of the old bastion.

1351. (*President.*) Can you state to the Committee what the total estimate of the works at Spike Island is?—Originally it was estimated that they would cost 10,000*l.*, but that was on the supposition that the work would be done by convicts. The convicts, however, have been withdrawn from our works and put on the Admiralty Dock Works, and I think the result will be that the estimate will be something like doubled. I think it will cost 21,000*l.* to complete the batteries at Spike Island.

1352. (*Mr. Hawkshaw.*) You mean including what has already been done?—Yes.

1353. (*President.*) That is entirely owing to the withdrawal of convict labour?—Mainly.

1354. (*Major-General Simmons.*) The estimate of the Commanding Engineer for completing those works according to the plan approved on the 20th June last, is 16,000*l.*, including all the expenditure up to the present time?—The Commanding Engineer has omitted to include a sum of 2,580*l.* already expended. I think also he has somewhat under-estimated the probable cost.

Camden Fort.

1355. (*Major-General Simmons.*) Is the plan of Camden Fort, as furnished to the Committee, that of the works as it is proposed to complete them?—Yes; generally.

1356. What modifications is it proposed to introduce?—That plan is subject to modification in many of the details.

1357. In this case is it proposed to mount the guns *en barbette* in the upper tier?—Yes; all *en barbette;* they will be 175 feet above the sea.

1358. (*President.*) What height is this battery (pointing to the plan) above the sea?—It varies from 50 feet to 83 feet. The highest point here (pointing to the plan) is 79 feet; it is 50 feet at another point, and 83 at another.

1359. (*Major-General Simmons.*) No part of the sea face of the upper portion there (pointing to the plan) is done?—No; that is done (pointing to the plan), but none of that is done (describing on the plan).

1360. The only part done is that work which is necessary to secure the ground from the land side?—Yes; then there are certain batteries in existence which belonged to the old work, which will have to be re-modelled.

1361. What barracks is it proposed to build?—Already we have casemated quarters for the men, and we propose, when funds permit, to take down the old officers' quarters, and build new

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ones inside the work. These quarters are not shown on the plan.

1362. It is to be adapted for permanent occupation in peace time?—Yes.

1363. (*President.*) Will this plan be subject to the same corrections with reference to the Moncrieff carriages as the others?—Yes; the lower batteries; I do not contemplate it in the upper ones.

1364. Is it intended to stop the work at the same level, as in the case of Spike Island?—The intention was to complete the upper work first; that is, the sea batteries, which are to be *en barbette*, and about which there can be no difference of opinion, leaving the lower batteries to be constructed afterwards. That would give us plenty of time to settle whether the Moncrieff system should be adopted.

1365. The arrangement for the barracks in this fort is still under consideration?—The barracks for the men are already built; they are casemates in the work. It has been proposed to build new officers' quarters in lieu of those existing, which occupy part of the site of the upper batteries, but there is no provision for this in the estimate.

1366. Can you state to the Committee what the estimate for completing this work is?—Irrespective of the officers' quarters and the work dependant on their construction, I think the work will be done for about the sum stated in the parliamentary estimate.

1367. Then the estimates were not made on the supposition that convict labour would be employed?—Not for this fort. It was proposed to employ the convicts supplied to the War Department at Carlisle Fort and Spike Island.

1368. Then there will be a sum of 30,000*l.* for iron shields for this fort?—The sum of 80,000*l.* was intended partly for Camden and partly for Carlisle Fort. If the Moncrieff carriage is adopted, there will be a saving owing to the iron shields being rendered unnecessary. The magazine arrangements will be carried out on principles that are approved, with a proper proportion of expense magazines for each gun. A communication has been made in order to get the powder down from the main magazine to the lower batteries. The main magazine is here (pointing to the plan), and there is a special passage constructed to get it down to the lower magazines.

1369. As I understand, there will be one expense magazine for every four guns?—Yes.

1370. (*Major-General Dickson.*) What communication is intended to be made between the main magazine for the conveyance of powder in the upper battery to the guns in the lower one?—There is a passage which is specially arranged for letting down powder from the main magazine on a tramway, and in that way all the expense magazines in the lower battery will be supplied.

1371. (*Major-General Simmons.*) The battery over the casemates looking towards the interior of the harbour is provided with stone parapets, the guns firing through embrasures?—Yes.

1372. Considering the height that that battery is above the sea, do you not think it advisable that the parapets above the level of the genouillères should be removed, so that the guns might fire *en barbette*,—those parapets about 3 feet thick of stonework?—It has been designed on the assumption that any battering of that face is not at all likely to occur.

1373. I mean if the parapet was removed to the level of the genouillères?—I think, as a general rule, it would be better than trying to stop a shot with a small thickness of masonry.

1374. They seem to have adopted cut stone in these works very much more than in other works; for instance, those at Pembroke; and might not a considerable saving of expense be effected if there was more uniformity in adopting quarry-dressed stone instead of Ashlar work?—It is desirable to use as little cut stone as possible.

1375. Have you considered any arrangement for bringing the wires of submarine mines into these forts, so as to command the entrance to Cork Harbour?—Not specially for those forts, but the question is under consideration with reference to its application to works generally.

1376. (*President.*) Has it been considered what opening would be required under water for the Spithead Forts?—Yes, generally. Major-General Simmons has had that subject under consideration at Chatham, and Captain Steward, an officer in the War Office, is to be put in communication with the officers under the direction of Major-General Simmons, for the purpose of making a distinct plan for general adoption, to be applied in cases of sea forts. Before leaving, I would suggest that all estimates obtained from local officers should be referred to the War Office for examination before they are adopted by the Committee.

1377. (*Major-General Simmons.*) If the Commanding Engineer on the spot has plans which have been approved of, surely his estimates ought to be correct?—All estimates from Commanding Engineers are subject to examination in the War Office, even though they be estimates founded on plans which have been approved. With regard to the estimates for Carlisle Fort, the Commanding Engineer has added several items on account of services, which have not heen approved by the Secretary of State for War.

Hubberstone Fort.

1378. (*President.*) The plan before me of a casemated battery at Hubberstone Fort shows the alterations it was proposed to make in the magazines and shell stores, to provide accommodation for heavier guns to be mounted in the casemates?—These alterations are not provided for in the Defence Loan; it is proposed to do whatever is necessary for modern armament for this work under a special item to which I have before referred in reference to other cases of alterations to works consequent upon the adoption of a modern armament. I have not yet gone into the details of this plan, thinking that it was not one which the Committee would desire to enter into. It appears to me that a more economical plan might be adopted.

Friday, 31st July, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel SPENCER WESTMACOTT, R.E., examined.

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BREAKWATER FORT.

1379. (*President.*) You command the Royal Engineers in the Western District?—Yes.

1380. The Committee will consider the works in your district in the order of the Schedule. Beginning with the Breakwater Fort, has any material alteration been made in the plan of that fort since you have been in command?—The thickness of the outer walls has been increased, and the interior arrangements of the magazines and stores have been altered within the last twelve months. They are now completed.

1381. Originally the walls were to be 10 feet thick?—They were originally to be 10 feet thick on the front, and 12 feet on the inside. They are now increased to a general thickness of 18 feet all round, by the addition of concrete, and an interior wall.

1382. At the same time, I believe, powder-lifts and lighting arrangements were introduced?—Yes.

1383. Have any defects occurred in the fort?—None whatever. It was excellent work that had to be cut away in the alterations.

1384. Was the granite work all done by contract?—Yes; it was begun in 1861, and finished in 1865.

1385. When was the contract for the masonry work completed?—It was commenced in 1861, and completed about 1865. There has been another contract since then for the interior arrangements, and for building up the intermediate piers to carry the ironwork, but now suspended.

1386. Are you aware of any contract having been made for the iron superstructure?—The Millwall Company have a contract which was decided upon shortly before I joined the station in the spring of last year.

1387. Nothing has been done at Plymouth under that contract?—Nothing has been done as to the ironwork at Plymouth; but we have advanced with the piers to take the arches and backing of the iron plating.

1388. Is this what you have built (pointing to the plan)?—Yes. The arches are very nearly thrown over, and the piers are in progress to carry the inner part of the iron superstructure.

1389. (*Major-General Simmons.*) Are the iron-cased piers in progress likewise?—No.

1390. Are they included in the Millwall contract?—They are.

1391. Is the concrete in that also included in the Millwall contract?—No, in the contract for builder's work.

1392. Does the contract which you have now, include the arches between the brickwork and the iron piers?—It takes in everything that will be required to back up the iron; it will be the completion of the work, with the exception of the iron face and connecting structure.

1393. (*President.*) Is the brickwork over the iron arches and over the gun chambers included in the contract now going on?—Yes, and the concreting also.

1394. Then of course nothing of this part of the work (pointing to the plan) can be done until the ironwork is there?—Nothing of that will be done, but the inner portion is in progress.

1395. The liabilities you have mentioned under contract are the liabilities for the work you have now alluded to?—Yes; the liabilities go to the superstructure, and the completion of the fort in connection with the iron.

1396. Does it include all the interior fitments for the guns; and to make the casemates habitable as barracks?—Yes, it will complete all the work as far as we can judge at present, if no alterations are made.

1397. (*Colonel Elwyn.*) And make the fort ready for arming and occupying?—Yes; excepting probably some minor details.

1398. But still the money would cover those things?—Yes.

1399. (*Major-General Simmons.*) Is the Millwall Iron Company's contract based on a schedule of prices, or is it a lump sum contract?—It is a lump sum contract.

1400. Have you brought those contracts, or copies of them, with you?—No; the contract has not been prepared in the district, it was done at the War Office.

1401. But I presume you have copies furnished to you?—The terms of contract, but not the specification of work.

1402. (*Colonel Harness.*) In the return it appears that the sum already paid to the Millwall Iron Company is 13,019*l.*?—Yes; that is on account, and is still proceeding.

1403. I understand you to say that they have done no work for you?—Yes. They have done a great deal, as I understand, at their own works, and it is customary to pay the contractors sums of money on account; that is how most of the works have been paid for at Plymouth. So much money has been paid on account, reserving, in some cases, 20 or 25 per cent., and the final settlement is afterwards made on actual completion or measurement of work done.

1404. (*Mr. Hawkshaw.*) Do you mean that it is customary to pay a contractor for work done on his own premises?—No, it is not customary; but it has been done in this case. The rule is, never to allow a contractor for anything which is not delivered on the spot. It is not necessary that it shall be built in, but that it shall absolutely be delivered on the spot.

1405. (*Major-General Simmons.*) Have the

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Millwall Company done any work on the spot?—None.

1406. (*Mr. Hawkshaw.*) Or delivered any materials?—No; I can give no information about the ironwork.

1407. (*President.*) Has that sum of 13,019*l.* been paid under a contract of any kind?—Yes; and we receive instructions occasionally to charge certain amounts from the War Office.

1408. But you have given no certificate for work done for which that sum of money was paid?—None.

1409. (*Major-General Simmons.*) Nor have you ordered payment?—No; for whatever work is done in the district the payments are made under my signature; orders in this case are sent down from the War Office to charge certain sums in the accounts, but beyond that I know nothing.

1410. (*President.*) These payments are actually made, that the War Office send an order to you to pay?—Doubtless; but we do not see the certificates or bills of payment.

1411. They are sent down to you to be charged?—Yes.

1412. (*Colonel Harness.*) You have stated that a certain sum is held in reserve for work that has been done?—Suppose that a contractor has done a certain amount of work, amounting to 8,000*l.*, instead of being paid 8.000*l.* he may be paid 6,000*l.*, and the rest is held in reserve.

1413. You do that by instructions from the War Office?—It is according to the terms of contract prepared at the War Office.

1414. (*President.*) I suppose that the work done by the Millwall Company is carried on at their works on the Thames?—Yes.

1415. You could have no knowledge of that whatever?—No.

1416. Is there any officer from the War Office placed on the works of the Millwall Company?—I believe that an officer visits them, but he is not under my orders in any way.

1417. There is no resident officer there?—No.

1418. (*Major-General Dickson.*) To what extent is magazine accommodation provided in the fort?—The magazines are supposed to be capable of holding 1,400 barrels of powder.

1419. Will there be a separate magazine for the intended turrets?—Yes; but those turrets are undecided upon at present.

1420. The whole of the arrangements for the lifts and for the convenient service of the guns will be on the latest and most approved principles?—I presume so; the Director of Works supplies all the details.

1421. (*President.*) Are the arrangements for the lights, the passages, and the lifts all complete?—Nearly so.

1422. (*Major-General Simmons.*) You have stated that magazine accommodation is provided for 1,400 barrels; for how many guns is that store of ammunition intended?—For 18 guns; the turret guns will have separate magazines.

1423. Will there be two guns in each turret?—I understand that there will be two; but I do not believe that there is any design made for that yet. Nothing is known in the district.

1424. (*Major-General Dickson.*) Of what capacity will the magazine for the intended turret be?—About 180 barrels each.

1425. Of those 18 guns, how many can be brought to bear upon the channel between the western end of the Breakwater and Cawsand Bay?—I should say that there would be about five guns laterally east and west, and eight guns would be able to give a more or less direct fire to the front, and the same to the rear.

1426. (*Colonel Elwyn.*) What arrangements have you made in that battery for side-arms and artillery stores?—No special arrangement has been made, but I expect they will be made, as in other cases, and that there will be racks above the men's heads; they will be in the casemates themselves. With regard to the stores, there will be separate places appropriated for them.

1427. (*President.*) For how many men is accommodation provided in the fort?—Regulation accommodation for about 60 men, but some 180 could be put up in hammocks if required.

1428. For what quantity of provisions for those 180 men is there store room?—That is a question which I cannot undertake to answer, but there will be about 2,000 cubic feet of store space.

Bovisand Battery.

1429. (*President.*) Was the battery at Bovisand begun in the year 1861?—Yes; the original design in 1861 was for a casemated battery in two tiers for 42 guns.

1430. In 1864, I believe it was reduced to one tier of 23 guns?—Yes.

1431. (*Major-General Simmons.*) In what year was it begun?—The basement was begun in 1861, and they commenced work most likely during that year. It is generally considered that a work is commenced when you give a contractor directions to begin.

1432. (*President.*) Is the work now being carried on by contractors?—Yes.

1433. Who are the contractors?—Messrs. Baker & Co.

1434. Do you remember the amount of the contract?—It is upon a schedule of prices, and not a lump sum. There has been 43,429*l.* paid, and to complete the work on the present plan it will require altogether 56,385*l.*

1435. (*Major-General Simmons.*) Has the estimate of the work that remains to be done been made in your district?—Yes, since May last.

1436. Are you satisfied that the amount which remains in it will cover the work to be done?—There is every reason to suppose so; the work is now nearly completed.

1437. Have you put down any amount for contingencies in that estimate?—Yes, the usual contingent of $\frac{1}{10}$th.

1438. Does your experience of these matters tend to make you believe that the designs are so far decided upon that there will be no chance of contingencies?—Less chance in this case, because the estimate was made as the work is approaching completion. We are covering in the arches now, and have the greater part covered in and concreted. There will be some additions—for instance, an entrance gate, that was not originally provided, but that will come out of the sum now estimated.

1439. Is not a distinct account kept of the expenditure on each work?—Yes; a distinct account of the expenditure on each work.

1440. Was not the sum of 518,000*l.* allotted between these different works?—It was allotted at the War Office among all the works on the Devonshire side, except Bovisand.

1441. (*President.*) The War Office, it appears, fixed a certain sum for each group of works in the

district?—Yes; but this Bovisand work comes in one sum. The estimated cost was proximate, it was originally 60,000*l.*

1442. Does the contract include any preparation for placing the shields?—None whatever, that is altogether undecided upon.

1443. (*Major-General Dickson.*) In the magazines the passage as it at present exists appears to be very objectionable, as it is very dark and narrow. Would it not be advisable to omit the side passage, and move the hatch to the front, where the powder would go at once to the lift?—I think that that is very much a question for the Artillery. I think that the present arrangement is not objectionable, although I admit that the passage may be narrow. Here (pointing to the plan) you have got a perpendicular lift by which powder would be carried up, but anything might fall down, and therefore I think having this circuitous access to the magazine and a sill some 2 feet above the ground will be less liable to danger than a direct entrance into the magazine.

1444. (*Major-General Simmons.*) It appears in this case that the hatch is close under the powder lift, whereas it might be moved from 10 to 14 feet from it?—I admit that this is near to the powder lift.

1445. (*Major-General Dickson.*) Does not the very fact of its being very close to the powder lift make it less preferable than if it were moved to a distance of 14 feet?—I think that it would be a compromise of inconveniences. There is some merit in the other suggestion, but I should say that the thing existing as it does, I do not think it is a matter of sufficient importance to make it worth while to alter it.

1446. (*Major-General Simmons.*) Would not some inconvenience arise from the magazine men having to bring the powder through an unlighted passage from the magazine to the hatch, considering that the weight of the cartridge is from 45 lbs. to 58 lbs.?—I should think that the disadvantages that would arise from a man having to turn round two corners would be compensated by the greater security afforded by an indirect entrance into the magazine.

1447. Do not you consider that it would be necessary, if that passage is maintained, to provide means for lighting it?—I think that it would be an advantage, and it is proposed to be done.

1448. As shown in the plan, it would appear that the bays in which the ammunition is to be placed will totally obscure the light from the light closet?—They would, if they were carried up as high as the lights, but the lights are high, they are put right up near to the crown of the arch, and the light would pass over. I think that it would be desirable to alter the arrangement of the bays and make them perpendicular, instead of longitudinal to the work.

1449. (*President.*) Are those bays fitted up yet?—No.

1450. Are the light passages for the shell and powder all completed?—They are provided in part only.

1451. Are the doorways all formed?—Yes; everything is formed but the interior fitments; they are not yet made, and the doors are not put up. The contractor has those in hand now; they are being made in his workshops.

1452. (*Major-General Simmons.*) Would not the admission of lights to light these small passages be a matter of considerable inconvenience, considering the state in which the works are?—Some; holes would have to be broken through, as already done elsewhere.

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1453. (*President.*) As a question of economy, would it be more expensive to take away those division walls and throw those passages into the magazines, making a hatch direct into the powder passage, than to supply 10 additional lights and light boxes?—There would probably be some difference, but it would be inexpedient.

1454. (*Major-General Dickson.*) Do you not think that a saving of time in working the guns is of great importance, and that the hatch should be direct into the powder passage?—I do not think it would make any material difference in working, and would be an evil.

1455. (*President.*) How is the powder passage lighted? Is it by lights dropped down?—In the front passage there are boxes dropped in at alternate places into the crown of the arch; in the rear, some 40 lights are proposed to be thrown in horizontally for the magazines and side passages.

1456. Those passages will be lighted?—Yes.

1457. Would it be possible, in making arrangements for lighting that passage, to have the light so placed as to throw it into this place (pointing to the plan)?—No; I do not think so. This (pointing to the plan) is a low opening, and it would have a very indirect effect.

1458. You could not arrange to light both the general powder passage and the passages communicating with the magazine from the same light?—No; not with any effect.

1459. (*Major-General Simmons.*) What is the thickness of the covering over the casemates of this work?—Some of the arches are 18 inches, and some of them are 14 inches, and there is from 2 to 4 feet of concrete above.

1460. Does that thickness of material over the casemates correspond with the thickness generally of the works that are being constructed bomb-proof in Plymouth?—Yes; in the sea defences.

1461. And on the land forts?—There are various thicknesses of earth on the top, and some are under the ramparts as well, forming part of the work itself, not only as bomb-proofs, but carried up to get a sufficient view of the country round. In saying that the thickness of the arches on the sea works was from 14 to 18 inches, I may add that above them sand bags or earth could be placed when occasion required.

1462. If it is necessary for bomb-proofing, would it not be better to make the work complete, so that it would be ready without having to do any heavy works for service?—Unless essential to the connection of a work, such as a rampart, there will be less liability of damp to the casemates, and any defects can be remedied at once.

1463. (*Colonel Harness.*) Below that arch, what additional security is there?—In the bomb-proof arch over the magazine there are about 3 feet 6 inches altogether. In the lower arch, the arch is 2 feet 6 inches, and has a foot of concrete. The upper arch is 1 foot 6 inches thick, with 2 feet of concrete.

1464. (*President.*) In the questions which have been asked you with reference to the arrangements for the magazine there is one point that has not been alluded to, and that is the protection of the magazine from shot coming directly through the wall of the fort; and do you not think that a solid wall of 3 feet would afford greater protection against shot that might come through the outer wall than if there was a hatch there?—In a degree, certainly, if the shot be nearly spent.

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Picklecombe Battery.

1465. (*President.*) The arrangements at Picklecombe, I believe, are much the same as at Bovisand?—Yes; with the exception, that the one has a single tier of guns, and the other has a double tier.

1466. Has Picklecombe Battery been constructed under a contract?—Yes; and a schedule of prices.

1467. Who is the contractor?—Messrs. Hubbard and Co.

1468. You have stated that the amount already expended is 66,525*l.*, and that the sum required to complete it is 13,320*l.*?—Yes.

1469. What will the total amount be?—79,845*l.*, if there are no material alterations made.

1470. (*Major-General Simmons.*) Will that include all that is necessary to fit it as a battery, and make it ready for the guns?—It will include everything with the exception of iron shields, such as may be adopted.

1471. Is it the fact that the shells for the service of the upper guns have to be hoisted by two lifts, and that they do not pass from the magazine to the upper floor in one lift?—They pass up one lift, and when the shell comes to the first floor it is passed out right or left, up another.

1472. (*President.*) The arrangements for the shell lifts were made after the battery had been designed, were they not?—Yes; after the battery had been designed, and in a great measure constructed, alterations and additions were made to meet the requirements of more modern armaments. This additional wall (pointing to the plan) inside the basement passage, and these walls round the lifts, have been constructed.

1473. So that the arrangements for the lift are in fact those which appeared to be the most convenient with reference to the state of the works as they exist?—Yes; with reference to the existing state of the works, and adapted to meet modern requirements.

Cawsand Bay Fort.

1474. (*President.*) Was Cawsand Bay Fort constructed under a contract, or by military labour?—It was done by contract.

1475. Was the contract made on a schedule of prices?—I believe it was; the work was completed in 1863.

1476. Has anything been done to this fort since you have been in command of the district?—Nothing whatever. The work was done four years since.

1477. What is the total amount which has been expended on this fort?—16,171*l.*; part was paid under the Loan, and part under Vote 12 of the Army Estimates.

1478. Is there anything more required there?—Nothing, as regards the original design.

1479. (*Major-General Simmons.*) How many guns are mounted on this fort towards the sea?—13 altogether, about half of which would bear towards the sea.

1480. Do those guns bear towards the sea (pointing to the plan)?—Not very conveniently. I should only reckon upon about six or seven. Those two guns point rather indirectly. The distance from Picklecombe is about 2,500 yards.

1481. Nine guns point towards the sea-front, and the other four point towards the land-front; and considering the distance of Picklecombe Battery, is it not desirable that that face (pointing to the plan) should be provided with a fire from heavier guns?—I think it would be a very useful place to prevent a ship coming into Cawsand Bay and engaging the Picklecombe Battery on its western side. I think it is too far for taking part in the protection of the channel; but supposing a vessel to come in and engage the western side of Picklecombe Battery, that seaward face would be a very useful face, and would then bring it within 1,000 yards or less.

1482. (*President.*) At the present time the armament of this battery is solely intended to prevent ships from approaching Cawsand Bay?—That is all it can do.

1483. (*Major-General Simmons.*) Do you consider the gorge of that work sufficiently protected?—The long masonry front is exposed and seen over from the land side.

1484. (*Colonel Harness.*) Did not the Royal Commission recommend that a work should be erected on the high ground in the rear?—They recommended a barrack keep on Maker Heights, just behind the two central redoubts, capable of holding 1,000 men.

1485. And on Knatterbury Hill?—Yes; to cover Polhawn Battery.

1486. Those two together would have maintained the high ground that looks into that?—Such was probably the intention. No money has been provided for it, and I do not think that anything is intended to be done.

1487. (*Major-General Simmons.*) Has the site been purchased at Knatterbury Hill?—Yes.

1488. (*President.*) Is there any intention to construct anything at Hoo Lake Point?—No provision has been made for a 10-gun battery on Hoo Lake Point as proposed by the Royal Commission.

1489. (*Colonel Elwyn.*) The entrance to the magazine passage at Cawsand Battery did not appear to be secure, have any steps been taken to make it so?—The subject has been brought forward by the Commanding Officer of Artillery in the district, and the necessary measures are under consideration.

1490. The light passage had no gate?—That matter was also included in the same letter from the Officer Commanding the Artillery.

Drake's Island, Lower Works on.

1491. (*President.*) Is the battery on Drake's Island now being re-modelled?—The casemate battery on Drake's Island is completed, and all that is now being done to it is laying down new racers for heavier guns. The magazine arrangements are in course of being re-modelled.

1492. What alterations have been in progress at Drake's Island?—First, there was an alteration in the expense magazines. All the openings have been closed, the wall thickened to about 5 feet, and interior passages of communication been made throughout with the main magazine, which previously existed.

1493. (*Major-General Simmons.*) How many guns is each of the expense magazines intended to supply?—Seven guns.

1494. Do you think that the passage arrangements, by which the ammunition is to be conveyed from these magazines are adequate for the supply of seven guns, considering their extreme narrowness, and the circuitous nature of them?—No; I

think that increased expense magazines would be desirable.

1495. Or increased facilities for getting to the present ones?—The circuitous passage was put in as a protection against shells.

1496. Have any instructions been given to prepare plans or estimates for re-arranging the passages, or re-arranging the communications from the magazines to the battery?—There is a proposition to widen the passages and add a fourth magazine.

1497. No orders have been given since the visit of the Committee upon this subject?—I cannot say whether any specific orders have been given, having lately been absent on leave.

Upper Battery on Drake's Island.

1498. (*President.*) Has a contract yet been entered into for the Upper Battery?—Yes; we have taken a contract for that—the amount is 4,600*l.*

1499. That contract, I presume, does not include any ironwork?—No; we know nothing of any ironwork. It is simply for guns *en barbette* with an earthen parapet, and with intermediate bomb-proofs.

1500. With turntables?—That is not yet decided. They are for 12-inch guns.

1501. (*Major-General Simmons.*) What height is that platform above the sea?—72½ feet.

1502. What is it above mean tide level?—72 feet above mean high water.

1503. What is the rise of the tide there?—About 14 to 16 feet.

Mount Edgcumbe Battery.

1504. (*President.*) Is Garden Battery under Mount Edgcumbe completed?—Yes; it was constructed in 1862-3.

1505. Does the plan of Garden Battery which lies before me show the arrangements now existing for the magazines?—No.

1506. (*Major-General Simmons.*) Have you any knowledge of any design to modify that arrangement according to this plan?—Personally I have no knowledge upon the subject. It is the first time I have seen this plan, but there has been correspondence on the subject, pointing out the necessity of altering them.

1507. Have you submitted any design for altering them?—No; I received no orders upon the subject.

1508. What modification of the existing magazine arrangements do you consider necessary?—Some months since I suggested some alterations, considering that the magazines were not secure against a front or right lateral fire.

1509. Have any complaints been made as to those magazines not being dry?—Yes; but it was only so to a very small extent, and I think it has been remedied. Some six or seven months ago we found that there were some defects which appeared in the asphalte on the top, it was taken up and I have heard no complaint since.

1510. Was no damp caused by the earth at the back?—No; it was from a defective laying down of the asphalte.

1511. (*President.*) I believe that all the ammunition for the supply of Eastern Kings Battery must be brought from the magazine under the keep?—Yes.

1512. Are there any means by which the supply of powder could be improved?—It could be done by putting further expense magazines.

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Polhawn Battery.

1513. (*President.*) This battery, I believe, is completed?—Yes; it was completed some years since—in 1863.

1514. What amount of money had been expended on that battery?—8,850*l.*

1515. Is there any intention of re-modelling the armament of that battery?—No instructions have been received at present; the guns are only 68-pounders at present.

1516. (*Major-General Simmons.*) Is it desirable, looking at the object of that battery, that heavier guns should be mounted on it?—Yes; guns of longer range and greater power are required.

1517. (*Colonel Elwyn.*) Can large vessels anchor in Whitesand Bay?—Yes.

1518. (*Major-General Simmons.*) Is not the flank of this battery exposed to the fire of ships in a position in which they could not be reached by any guns whatever?—A ship would be in a great measure in safety, she could lay in a south-south-west direction, and would scarcely be touched.

1519. What is the distance from Polhawn to Tregantle?—About 3 miles.

1520. The object of this battery is to prevent a landing by an enemy in the bay between Tregantle and itself?—The object originally, I believe, was to prevent a landing on the eastern side of Whitesand Bay, where it was thought to be most probable.

Tregantle Fort.

1521. (*President.*) How far is Tregantle Fort completed now?—It was completed in 1865.

1522. Is any modification or alteration going on at the present time?—Nothing whatever. There are some minor improvements that it would be necessary to make in the magazines, but it is not decided what is to be done yet.

1523. With reference to what points are those improvements necessary?—The magazines were found to be damp, and they want improvement altogether, both the expense magazines and the main magazine.

1524. Are the racers for the guns provided on the land-front there?—Some of them are.

1525. Is anything to be done to this wall (pointing to the plan)?—Nothing is contemplated at present.

1526. Do you consider that it is necessary to do something to it?—Yes; I think that some modification of the existing angle will be necessary.

1527. What would you call it?—It may be called the left flank revetment wall.

1528. Do you think that the granite blocks which form the cheeks of the embrasures on the land-side are a good arrangement?—No; I think that in no case should any masonry appear above the sole of the embrasures, if avoidable.

1529. Of the 87 guns in this fort how many would bear on the ground in front?—I think that 12 would bear upon the front.

1530. Are not the embrasures so constructed as only to be liable to fire directly, or very nearly, directly, to their front?—Yes; I understand this question as referring to an enemy's fire against the fort.

1531. Do you consider that those five guns (pointing to the plan) on the Keep would be well placed for firing over the ground in front of the

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attack?—They would fire upon that ground, but over the rampart in front.

1532. (*President.*) Do you consider it would be necessary or advisable to put a battery on any projecting point to the eastward of Tregantle, to keep ships at a distance, and prevent them from enfilading the fort from the south-east?—I think it is essential to have batteries along Whitesand Bay, to prevent an enemy lying off. There are very good positions along the bay.

1533. Do you consider that Tregantle, as it now stands, is sufficiently protected against damage that might be done by shipping?—Certainly not.

1534. Will you be good enough to state what money has been expended on Tregantle?—There was expended, under the Loan, 135,425*l.*, and under Vote 12, 53,494*l.* There is a further sum required for some minor details, of about 200*l.*

1535. (*Major-General Simmons.*) Will that 200*l.* cover the expenditure necessary to re-model the magazines?—No; there is a sum of 400*l.* put down in the estimates for that purpose.

1536. (*Colonel Harness.*) The amount expended upon the Loan is 135,425*l.*, and under Vote 12, 53,494*l.*, the total amount being 189,119*l.*; then there is the alteration of the left flank wall?—That has not come under consideration yet.

1537. What fund will that come out of?—I think that it may be included in the annual estimates.

1538. (*President.*) Have you not contemplated that there will be more required out of the Loan than the sum of 135,425*l.* for this fort?—I cannot say whether any further charges may be made under the Loan; at present I am not aware.

1539. You are not aware of any proposal to make any further expenditure upon this fort out of the Loan?—No.

1540. (*Major-General Simmons.*) Considering that the keep is from 150 to 200 yards in the rear of the earthwork which covers it, and that the masonry is on a level, or very nearly on a level, with the crest of the parapet in front of it, do you think that the place would be tenable if it were attacked by batteries in front?—I think that those shot which cleared the parapet in front would very probably strike the keep. I should say that shot coming over would pass on and batter the front of the keep.

1541. What was the estimated cost of Tregantle?—The actual cost has been 189,119*l.*

Scraesdon Fort.

1542. (*President.*) Is the fort at Scraesdon completed?—It is now completed, with the exception of some minor details.

1543. What sum of money has been expended upon it?—The amount expended upon it, under the loan, has been 109,827*l.*, and under Vote 12, 16,863*l.* A further sum of 4,255*l.* will be required to complete it. There is also a further claim of 9,000*l.* from the contractor, but these works have only just been measured up; they were completed last month. It was a lump sum contract, but there were many alterations, and the contractor has claimed to have all the work re-measured. These measurements were completed last month.

1544. Have the surveyors, who have been appointed, agreed upon the sum that is due to the contractor?—No.

1545. The sum in dispute is 9,000*l.*, as I understand you?—I am informed that the contractor is going to make a claim for that amount. Tregantle and Scraesdon appear together, in the estimates under the Loan, at 260,000*l.*; the whole expenditure upon the two has been 320,000*l.* That is including the amount expended under Vote 12.

1546. Does that include about 70,000*l.* out of Vote 12?—It includes about 70,300*l.* out of that vote.

1547. The sum expended out of the Loan, up to the present time, does not exceed 260,000*l.*?—It is only 245,000*l.*

1548. In round numbers, we may say that the money expended out of the Loan, and the sum still required, make about 250,000*l.*?—About that.

1549. (*Major-General Simmons.*) Do these figures include, in each case, the cost of the land?—No; the cost of land on this section has been 67,159*l.*, of which 250*l.* is charged to the Loan for Defences; also a sum of 4,100*l.* has been proposed, but is not yet allowed, for roads that will be required.

1550. To what item is the other amount charged?—To Vote 12, previous to the loan having been taken.

1551. Then, in fact, these two forts have cost something like 320,000*l.*?—Yes.

1552. (*President.*) With reference to the work itself, what defects have appeared in the course of construction?—Some defects of construction in the scarps and retaining wall have arisen during the progress of this work; but I do not attach any very great importance to them at present; they have been remedied. The ground is rock, and the cost altogether only about 1,800*l.*

1553. Do you consider that those defects are now entirely remedied, that there is no fear of any further failure, and that no more money will be required?—Yes; so far as we can at present judge.

1554. In the construction of the lower works, where the escarp galleries have been formed, was that done for the purpose of defence, or what was the object of those galleries?—I am not prepared to state what the entire object of the galleries was; being loopholed, no doubt defence was intended, and possibly additional means of communication from the upper works.

1555. Did the construction of those galleries add much to the expense of the works?—The addition of the envelope gallery within the scarp has necessarily involved its proportionate expense.

1556. Could the wall have been built equally as strong without the galleries?—Certainly.

1557. Do you consider that the escarp galleries were necessary in constructing the wall for the support of the earthwork?—No.

1558. (*Major-General Simmons.*) Do you consider that any traverses are necessary across the terreplein of this fort?—Unquestionably; I think that traverses are required to this, and to all the works throughout the defences; I mean interior traverses.

1559. Has any plan been designed in the district for the purpose of supplying traverses?—No; I am aware that since the subject has come under discussion, it has been proposed at the War Office to introduce a traverse.

1560. There being a line of casemates along the north face, in the centre of which the magazine is, do you think that a traverse would be necessary to cover that line of casemates from the same

ground in front of the work towards Tregantle?—Yes, towards the south-west.

1561. Do you think that a traverse is necessary to protect those casemates from the high ground in front of Tregantle?—I think that any shot or shell that passed over the southern faces would of course be liable to strike those casemates and endanger the magazines.

1562. Do you think that the fire from that direction is likely to cause any risk to the magazine, the entrance of which actually faces it?—As it now exists, certainly, but it is proposed to modify that.

1563. Has any plan been made for that purpose?—Yes, and nearly decided upon.

1564. Has any estimate been made for it?—Yes.

1565. Is the estimate for an alteration in the magazine included in the 4,000*l.* which you have stated is required for the work?—No.

1566. Do you think that a traverse is also necessary to protect the casemates near the entrance from the high ground to the westward?—A longitudinal traverse, or one in the form of a T, would answer the purpose both south and west. This might be utilised for casemated barracks, simply forming the traverse with the casemates inside, and they might be completed when the time came. That would be the cheapest barrack accommodation, and is unquestionably required.

1567. Taking the two forts together, Tregantle and Scraesdon, do you think that the line of land front is properly protected without an intermediate work?—No; I think that an intermediate work, either where it was proposed, or somewhere about there, by the Royal Commissioners would be very desirable and proper either as a field or permanent work.

1568. Was it proposed as a permanent work?—I think it was proposed as a small permanent work.

1569. (*President.*) There is at present no idea of having an intermediate work?—No.

1570. (*Major-General Simmons.*) Does not the ground in front of Scraesdon present a very large amount of cover, close up to it, as also the ground in front of Tregantle, unless the intermediate ground is occupied?—It does.

1571. (*President.*) Without going into the details, as I understand you, it is proposed to modify the magazine and make the entrance to it more safe than it is now?—Yes.

1572. (*Major-General Dickson.*) Expense magazines were provided, I believe, for every four guns?—There are about 15 guns that bear upon the front of an attack out of 57, the assumed number; and for those 15 guns there are three expense magazines, that is one for every four or five guns.

1573. What accommodation is provided in the magazine for shells?—It is proposed to appropriate part of the main magazine accommodation for shells.

NORTH-EAST DEFENCES.

Ernesettle Fort.

1574. (*President.*) In what state is Ernesettle Fort now; is any work going on there?—There are no works going on at this moment.

1575. Is Ernesettle Fort completed?—No; it will require about 2,000*l.* more to complete it.

1576. What sum of money has been spent upon it?—About 15,000*l.*; but the past expenditure on each particular work, from Ernesettle to Austin, can only be assumed approximately at present, as the general charges for plant, rail and locomotive expenses, quarries, wharves, and roads, have not been separately allotted. The whole expenditure can, however, be given—being 187,991*l.* to the 30th June, 1868—while a further estimated sum of 64,131*l.* to complete, gives a total of 252,122*l.* for the group, including roads.

1577. Out of the loan?—Yes, out of the Loan entirely.

1578. (*Major-General Simmons.*) Does the sum of 15,000*l.* include the purchase of the land?—No; the cost of the land for this section has been 217,708*l.*

1579. There is an advanced mortar battery on the west flank of that work?—Yes.

1580. Do you consider that the space allowed for that battery is sufficient?—It is rather restricted, and might, I think, be improved.

1581. Are not the mortars under casemates?—Yes, but the idea is that they will blow the head of the casemates out; I think that we can give a better slope to the earth in front which will give more space and ventilation.

1582. (*President.*) Is it desirable to give more space?—Yes, I think it is restricted, but it may be improved.

1583. This (pointing to the plan) is merely the gorge wall?—Yes.

1584. (*Major-General Simmons.*) Has any ground been purchased with the view of making a keep in the rear of this spot?—Yes, but there is no project nor provision for any work on it.

Agaton Fort.

1585. (*President.*) Is anything going on at Agaton now?—Yes; it is going on to completion.

1586. Is the work done by contract?—No; it is being done under the direction of the Engineer officers.

1587. Was it begun by contract?—Yes; it was commenced in 1863, and was continued at different rates of progress until 1866, when the contractor's work ceased, since which time all the works have been carried on under the immediate direction of the officers of Engineers, with satisfactory results, both as to execution and, so far as can be at present judged, with a promise of economy. Their completion is anticipated by the end of 1869, or probably the beginning of 1870.

1588. (*Major-General Simmons.*) Do these plans agree with the works as executed?—I have not seen these particular plans before.

1589. Is not the terreplein of this fort very much exposed to the high ground in front?—No; the site is lower, but the interior of the work not directly exposed.

1590. What has been the cost of Agaton?—It has cost, say 33,000*l.*, and 6,000*l.* more are required to complete it.

1591. You have stated that the results of the direct employment of labour, under the officers of Engineers, without the intervention of a Contractor, are satisfactory. Do you consider that the work has been better done than it would have been under a contract?—I cannot say it has been better done, but it has been very satisfactory. We know that it has been substantially and well done.

1592. Can you carry out any alterations or

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modifications without having claims brought upon you?—Of course the management rests entirely with the department.

Knowles Battery.

1593. (*President.*) Is this battery being constructed in the same way, directly under the officers of Engineers?—Yes; the whole of the north-eastern defences.

1594. (*Major-General Simmons.*) What has been the cost of Knowles Battery?—15,000*l.*, and about 1,500*l.* more will be required to complete it.

1595. This plan has been a good deal modified since it was first designed, has it not?—It has.

1596. (*President.*) Have many alterations been made in the course of the works?—I believe that material alterations have been made.

Woodlands Battery.

1597. (*Major-General Simmons.*) What has been the cost of the Woodland Battery?—20,500*l.*, and 8,000*l.* more are stated to be required to complete.

1598. Though the Haxo casemates are attended with a good deal of expense, do you not consider that they are a good arrangement for guns in these positions (pointing to the plan)?—Yes.

Crownhill Fort.

1599. With reference to those works of defence extending from Crownhill to the River Tamar, have any of them guns which bear directly upon the ground in front of Crownhill?—No, they have not. Crownhill in itself is unsupported.

1600. There is a ridge, is there not, running along from Crownhill to a creek that runs down, and which completely commands that line of works?—Whitley Hill commands the sites at Knowles and Woodlands to the south, the former is 330 feet above the mean level, and the two latter are 175 feet.

1601. Do you consider that the line of defence is taken up from Tregantle to Crownhill all round, and covers completely the dockyard from a distant bombardment?—The intermediate space between St. Germain's River and the Tamar in front of Saltash remains at present unprovided for. It is essential it should be occupied. The Tregantle and Scraesdon defences are useless unless some position in advance of Saltash, completing the connection, is established.

1602. (*President.*) Do you consider that Crownhill is a well-constructed fort, in the position which it occupies, to resist any attack that may be made upon it?—I think that Crownhill Fort is well placed, well designed, and well and economically constructed. I think that it is a very good work, but it has no immediate support from the rest of the line.

1603. What has been the cost of Crownhill?—60,000*l.* approximately, and 18,500*l.* more will be required to complete it.

Bowden Fort.

1604. (*President.*) What has been the cost of Bowden Fort?—13,000*l.* proportionate cost, and 5,000*l.* are required to complete.

Egg Buckland Keep.

1605. Was anything done by the contractor to the Keep at Egg Buckland?—No.

1606. What has been the cost of Egg Buckland Keep?—15,000*l.* have been expended, and 6,000*l.* more are required.

1607. (*Major-General Simmons.*) For what number of men will it afford accommodation?—About 400.

1608. What magazine accommodation is there for itself or for the other work?—There is accommodation for the whole of the three works round.

Forder Battery.

1609. What has been the cost of Forder?—7,000*l.* have been expended, and 8,500*l.* more are required.

Austin Fort.

1610. (*President.*) What has been the cost of Austin Fort?—9,000*l.*, and 8,500*l.* more are required to complete.

This and other replies connected with the North-East group of Defences embrace general expenses, connecting lines, military roads, and emplacements for guns, approximately allotted against each work to embody the total amount of 252,122*l.* not yet separated.

Defences at Efford and Laira.

1611. What amount of money has been expended at Efford?—There had been expended up to 30th June last, 29,721*l.*, and there is required to complete it 17,485*l.*, amounting to 47,206*l.* That work is being done by contract, on a schedule of prices, not a lump sum.

1612. (*Major-General Simmons.*) Is the sum which you have stated as required to complete the work, founded upon your own estimates?—Yes; they have recently been estimated in the district.

1613. What amount of contingencies have you allowed upon that sum?—The usual contingency of $\frac{1}{10}$th may be assumed.

1614. (*President.*) At Efford, are the gorge works protected from fire from the high grounds which command it?—In front they are, but not on the flank.

1615. A shot coming from Underwood Hill would strike the gorge buildings, would it not?—I look upon the occupation of that hill as very important.

1616. Would not the two forts, Laira and Efford, be seriously damaged by works placed upon that hill?—Laira is dangerously exposed; Efford in some measure, though 100 feet higher. If Efford should be forced, the north-east defences become turned, and the whole of the place will be open; you cannot make that position too strong.

1617. What is your estimate for Laira?—There has been expended 10,877*l.*, and 6,352*l.* more are required to complete it, making a total of 17,229*l.*, but this also includes an emplacement for six guns on the right of Laira, and an expense magazine, to look down the Laira River. The cost of the land for all this section is 217,708*l.*, from the Tamar to the Laira.

1618. (*Major-General Simmons.*) Has any ground been purchased for defensive purposes for any work on the left bank of the Laira, between Efford and Hoo Lake?—None; but at least one work, in front of the Laira iron bridge, will be required.

Fort Staddon.

1619. (*Major-General Dickson.*) What has been the expenditure on Fort Staddon?—The expenditure on Fort Staddon, including 342*l.* required to complete, will be 111,562*l.*

1620. (*Major-General Simmons.*) Does that include Brownhill Battery?—No; that will cost 25,640*l.* with accessories on its right, the total being 137,202*l.*

1621. What provision is made for water in Staddon Fort?—There is a capital well, and tanks. There is an ample supply, and wherever you sink water can be obtained.

1622. (*Major-General Dickson.*) In the magazines of Fort Staddon the arrangements for lighting were not on a good principle, not so safe as they should be, and old-fashioned?—The lights are set in glazed boxes, and are carried round by a separate passage altogether; they have nothing to do with the powder passage.

1623. The arrangements to afford ventilation for clearing the smoke out of the mortar battery by means of large openings in the roof of the casemates would be dangerous if exposed to vertical fire. Do you not think that that form of battery is objectionable?—I think that the openings on top are large, but some ventilation will be of course necessary.

1624. Do you consider those openings in the casemates objectionable?—I think that the men will be choked if you do not have some.

1625. I mean objectionable on the ground of being exposed vertically to an enemy's fire?—I think they are open to objection, on that score, but they are required for ventilation, as the casemates are not open to the rear.

1626. (*Major-General Simmons.*) Do you not think that the stonework of the Haxo casemates, constructed as they are, is objectionable from being exposed to a direct fire from the ground in front of them?—I think decidedly so.

1627. (*Major-General Dickson.*) This (pointing to the plan) is an expense magazine under the right flank; is there no lift in this magazine to bring the powder up?—There is one magazine only provided with a lift, that is on the eastward front.

1628. (*Major-General Simmons.*) Would it not be advisable to introduce a lift to raise the powder from the level of the expense magazine to the level of the terreplein, for the use of the guns?—It would be a convenient arrangement.

1629. (*Major-General Dickson.*) Do you not think it would also be a convenient arrangement to have lifts introduced into the main magazine?—No; I do not think it would answer any material purpose, for general distribution.

1630. (*Major-General Simmons.*) Do you think that 22 feet, which appears to be the thickness of the parapet on the left front, is sufficient to resist the artillery of the present day?—No; but nothing definite has been arrived at as to the thickness of earth that is required at the present day.

1631. Do you think that a greater thickness would be advisable?—In the construction of new works a greater thickness would, no doubt, be given.

Brownhill and Watchhouse Brake Batteries.

1632. Do you propose to complete the gorge wall which encloses the battery at Brownhill?—No; it is intended to remove that gorge wall altogether.

1633. I believe the idea was that it was to act as a sort of screen, to prevent ships seeing into Brownhill, and not to stop shot. What is the height of that hill?—Such was possibly the object. The height of the hill is 350 feet above the sea.

1634. (*Major-General Dickson.*) For how many guns is Watchhouse Brake Battery to be constructed?—It will be for four guns or five.

1635. (*Major-General Simmons.*) What will be the probable cost of Watchhouse Brake Battery?—It is included in the Brownhill Batteries and accessories, 25,640*l.*

1636. In what estimate are the lines between Staddon and Bovisand included? They are included in the accessories. Fort Staddon has been put down at so much, and Brownhill Battery and accessories at 25,640*l.*; there is no separate account, otherwise.

1637. Then this line between Fort Staddon and Bovisand is included?—Yes.

Fort Stamford.

1638. (*Major-General Dickson.*) What is the estimated cost of this fort?—The cost to the 30th June last has been 59,123*l.*, and it will require about 11,135*l.* to complete it; so that the total cost may be taken at 70,258*l.*

1639. Can you state to the Committee the total expenditure for the works in the Staddon division?—The total expenditure will be 207,460*l.*, and in the purchase of land 62,639*l.* The cost of roads has been included in the works generally, because they were not of a very extensive nature.

1640. In your return you use these words: "The total expenditure on Group *a*, *b*, *&c.*"; what does that include?—That includes the North-East Defences, Efford, Laira, and Staddon; the estimated expenditure on the group is 526,646*l.*

1641. For how many guns is Fort Stamford built?—It is built for 40 guns, but this is only approximate at present.

1642. (*Major-General Simmons.*) How many of those guns will have a bearing upon the sea?—There will be seven.

1643. Are those guns well placed as sea batteries?—I think they are too far off to be of any material importance. If the ground in front were sloped down they would get a better range, if a vessel should stand in.

1644. Are the scarps of this work on the land front fully covered from the view of the hills beyond?—No; the work is partially commanded by the hills in front.

1645. Are the scarps fully defiladed from those hills?—The scarps on this side I should say are not.

1646. Do not you think that the presence of so much uncovered masonry and brickwork along the sea face of Fort Stamford is very objectionable in the embrasures?—As a rule, I think that any masonry above the sole of the embrasure is objectionable.

1647. In this instance is it not very much exposed?—I do not think it is more exposed than in other works, but it is objectionable under any circumstances. No doubt in future more modern designs, material modifications both in principle and details might be introdueed.

The witness withdrew.

Friday, 21st August, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel WILLIAM CHARLES HADDEN, R.E., examined.

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1648. (*President.*) I believe you are the Commanding Royal Engineer in the Portsmouth district?—Yes.

1649. How long have you been in command of that district?—For 12 months.

SOUTHSEA BATTERIES.

1650. Were the auxiliary batteries at Southsea constructed before you took the command, or have they been in your hands at all?—Certain portions of them were then finished, but the plans for completing the batteries had been prepared before I took the command. I have had nothing to do with the plans.

1651. Have the plans been at all altered during the time you have been in command?—Plans have been furnished from time to time as the works progressed, in the first place for the west wing, and subsequently for the east wing which is the largest.

1652. Has a 23-ton gun been lately mounted upon the east flank of the western battery?—Yes.

1653. Has any arrangement yet been made for supplying ammunition to that gun?—Yes, there has; but I think that the arrangement contemplated a supply of ammunition for a different arm.

1654. If I remember rightly the shells were to be brought up rather a steep ramp from the shell store, and that ramp is now only covered with gravel; is it intended to make any tramway, or to provide any facility for the conveyance of heavy shells?—That is not yet decided upon. I should state that all these matters are decided at the War Office.

1655. Do you consider it is necessary that something of the kind should be done?—Yes; but all the appliances are furnished from the War Office, all the details are furnished from the War Office, and the Commanding Engineer has nothing whatever to do in any shape or way with the works beyond seeing them carried out in their integrity, as he is ordered to do, and I wish that to be distinctly understood. In the position in which I have been placed there I have no voice. The plans are sent to me, and all that I have to do then is to see that those plans, in their integrity, are carried out.

1656. (*Colonel Harness.*) Do you consider yourself only responsible for seeing that the works shall agree with the specification?—Yes; and I have already written that.

1657. That is what you mean now to state to the Committee?—Yes; I have nothing more to do with it.

1658. For the security of the work you are not responsible?—If it should be defective in its material points, I consider that the War Office is entirely responsible as far as regards offensive and defensive capabilities, but not defective construction.

1659. (*President.*) I presume that you would consider it your duty to point out any grave defects that you might observe?—Most unquestionably.

1660. (*Colonel Elwyn.*) You are not consulted in any way before the design for the works is prepared?—Not the least in the world; we never see it; in fact, I do not know who has seen it. The works seem to be done, generally speaking, from hand to mouth; the work is commenced, and then it is afterwards completed, but changes are going on continually. I do not know what the reasons are; but in fact the arms being now different, there are now constant changes which require alterations to be made in the works, so that what has been intended in one instance is probably not carried out in another. There may be reasons for these changes.

1661. (*President.*) You have stated that the designs are prepared at the War Office, and that you do not know what the reasons are that have led to the changes?—Yes.

1662. (*Colonel Harness.*) During the last five years there would have been reasons, would there not, for considerable changes both as to the mode of mounting ordnance, and in providing accommodation for the ammunition?—Most unquestionably.

1663. (*President.*) The necessity for these changes has been considered at the War Office, and they have been determined upon there without reference to you as Commanding Officer of Engineers?—Entirely so.

1664. (*Colonel Elwyn.*) Are the Committee to understand that the Commanding Officer of Artillery and the Commanding Officer of Engineers are not in any way consulted with regard to providing the necessary armaments for these works?—I cannot speak for the Commanding Officer of Artillery. I have not been.

1665. Do you consult him at all?—Not in the least, but by that I do not wish it to be understood that I ignore him, but the question does not arise on which I should consult him.

1666. (*Major-General Simmons.*) Are not any further measures intended to be taken for the protection of the work from assault, in the ditch for instance, such as palisading, or anything of that sort?—Yes; a palisading has been approved of, and is now about to be carried out.

1667. Is that included in the amount of 3,800*l.* for further liabilities?—No, it is not; as the service has been authorized within the last six weeks:—the sum will amount to 300*l.* or 400*l.*

1668. Will that palisading extend round on the sea face, as well as in the ditch?—Yes; I understand that by the sea face, you mean in front of the Old Castle.

1669. I mean in front of these batteries (point-

ing to a plan), is it intended to carry the palisading round the ditch in front of these batteries?—Yes.

1670. (*President.*) Referring to the ditch, is there not some work now going on for the protection of the foreshore?—Yes.

1671. Is the cost of that work included in the "Extras"?—No; I think that that is included under another vote.

1672. (*Colonel Harness.*) Is not some additional protection required in the foreshore part of the work?—Yes; it is going on now.

1673. Does this estimate include the cost of that work?—No; it is under the Annual Estimate Service.

1674. (*Major-General Simmons.*) Are these extensive works?—No; not very extensive.

1675. Do you remember the amount of the estimate?—No; the fact of the matter is that a sum of money is given for the protection of the coast line generally, and we have been allowed to expend this year a certain amount, only a limited amount; but prospectively to carry on the work necessary for the security of the foreshore; I think the cost will be between 400*l.* and 500*l.*

1676. That would be not only for the work in question, but generally in the Portsmouth district?—No; it will be more for that. I think it is 2,400*l.*

1677. (*President.*) Have there been any failures in the parapets or traverses in this work?—None since I have been there.

1678. (*Major-General Dickson.*) Can you inform the Committee whether there is a separate magazine provided for the 600-pounder?—Yes, there is; the magazine is the one below here (pointing to the plan).

1679. Is it constructed for two guns?—No; only one. The shell store originally for two mortars, I believe.

1680. The terreplein between the racers is not asphalte or concrete, but shingle, is it not?—Yes.

1681. Is it to be brought to a hard and level surface with asphalte or other material?—No; it is not proposed to do that.

1682. (*President.*) Will the shingle bind at all? I presume we shall endeavour to bind it.

1683. (*Major-General Dickson.*) What steps do you intend to take to cause it to bind?—I can hardly say, but I think it will be eventually hardened.

1684. (*President.*) Have you ever tried at that fort the application of chalk?—Yes; we have done it in the roads in the castle. It is a foundation of chalk and shingle and gravel.

1685. Does it get quite hard?—I know that in some cases it does get hard, but it has not got hard there yet.

1686. (*Colonel Elwyn.*) It appeared that the arrangements for lighting the magazine in the Keep at Southsea Castle were very defective and dependent entirely upon reflectors. Is it intended to make any alteration in that respect?—No instructions have yet been given with regard to that.

Hurst Castle.

1687. (*President.*) What contracts are now existing for the works at Hurst Castle?—For Hurst Castle the original contract amounted, I believe, to 68,000*l.* That work has not yet been completed, but that amount has been expended upon the original contract.

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1688. That is in the formation of the casemates and the building of the battery?—It has been expended upon various works—upon the works as they at present exist.

1689. Is that contract at an end?—It is so far at an end that it has formed the nucleus of another contract. It is so far at an end that the contractor having complained of the great losses which he had sustained, it was arranged by the Government to give him 15 per cent. upon his original schedule of prices for any work that might be performed beyond the sum of 68.000*l.*

1690. Was the contractor Mr. Tyrrell?—Yes.

1691. Is he the contractor for the work that is now going on?—Yes; the only one.

1692. The work which is now going on is the fitting up of the casemates, is it not?—The completion of the work has involved an alteration to the magazines; also the fitting up of the casemates, and laying the floors; and, in fact, completing the work.

1693. How much will the total cost be?—107.000*l*

1694. The amount expended is 103,000*l.*, is it not?—Yes; with the liabilities.

1695. I gather from the printed statement that the estimate for the work chargeable against the Defence Loan is 110,000*l.*, and that the amount required, according to the present plan, will be 108,000*l.* for completion?—It is very difficult to say what completion means, because things are altered to-day, and to-morrow you cannot tell what the expenses will be.

1696. As the works stand now the calculation is that 108.000*l.* will provide for them?—No; we do not think so, because there is still work to do. That estimate only includes the work which has been already ordered, and the work that will be paid for.

1697. (*Colonel Harness.*) That is to say, beyond the work that has been ordered, there is work still necessary to be done before the whole will be completed?—Yes; and there will be liabilities. I think that that estimate includes all that is at present constructed, or that we need say we owe the contractor for; but it does not include what he may probably consider it requisite to ask for in the shape of compensation.

1698. (*Major-General Simmons.*) Was not that 15 per cent. additional, which you stated just now, was to be paid to the contractor upon his schedule of prices intended to cover any extra expenses that he might be put to in consequence of the changes that were made?—No; I think not. The tender of the contractor, as far as my memory serves me, was not only the lowest of the tenders, but it was 10,000*l.* below the tender of any other contractor; and when he had completed the work he was to execute according to his bills of quantities, and the tender and specification—viz., 68,000*l.*, he stated that he had lost so much by carrying out the work upon those terms, and it was so obvious that it was conceded to him at once. The War Department agreed to give him 15 per cent. additional to go on.

1699. Since the work under the original contract for 68,000*l.* was completed, has that additional 15 per cent. been given to this contractor without competition, or without any public tender?—I cannot state what competition there has been, but that was the state of things that I found when I went to Portsmouth.

1700. (*President.*) I do not quite understand whether you mean that, because the contractor

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took this contract for the sum of 10,000*l.* below the tender of any other man, he would therefore be entitled to an extra amount upon the work he had executed?—It is not for the work done for the first 68,000*l.* that he gets it, it is only for the work done beyond that.

1701. You have stated that he alleged that he lost money upon his contract, and that his tender was 10,000*l.* below that of any other contractor?—No; he did not say that, because he did not know that it was 10,000*l.* below that of any other contractor.

1702. You stated that?—Yes; and I believe it to be the fact.

1703. Therefore you consider, I presume, that a claim for some further amount might be made upon that contract, or is that what you mean?—No; I was asked a question by Major-General Simmons whether the contractor had received his 15 per cent. additional without the work being submitted to competition, and I said that I did not know whether there had been competition or not. This was the state of things that I found, that the contractor was to get 15 per cent. beyond the prices under his original contract, or beyond the amount of 68,000*l.*, which was the sum originally tendered.

1704. (*Colonel Harness.*) When the work under the original contract was done, a further contract was concluded, and under that the contractor was to receive 15 per cent. above the prices in the original schedule?—It must be so because that appears. I think that way of putting it will explain it.

1705. (*President.*) Is it your opinion that a contractor who undertakes a contract at a lower sum than anyone else has any claim upon the Government for any money beyond the amount of his tender for the work contained in that contract?—Decidedly not; I do not consider that to be so, nor did I mean my previous answer to convey that meaning. What I intended to say was that the contractor stated that he had lost so much money under the original contract, because it had been taken at a very low rate, and upon his making that representation the price of the further work that he was called upon to perform was advanced in price 15 per cent. I should state that there were alterations made in the casemates which, under the original contract, were never contemplated.

1706. When the Committee were at Hurst Castle their attention was called to the ventilation of the magazines, and particularly to those in the Old Castle. Are any plans now in your hands for the improvement of the ventilation?—All the plans that I have, I presume, are copies of those that are here.

1707. Is no work now going on for the improvement of the ventilation?—Nothing beyond what the Committee saw.

1708. If I remember rightly, there were no openings in the upper parts for carrying out the confined air?—No.

1709. Have you received no orders to improve the ventilation of the magazines?—None. I have seen nothing but the plans which you have seen from time to time.

1710. Do you think there is any tendency in the foreshore to wash away?—That is rather peculiar. At one time it was supposed that there was such a tendency, and indeed a great deal of shingle was washed away, but within the last two years the increase there has been something very great.

1711. Has something been done to retain it?—Yes.

1712. Since you have been there have you observed that any prejudicial effect has been produced by its washing away?—On the contrary, it has accumulated to an extent that one would hardly have credited. I mean the shingle, and so much so, that it was proposed to add an apron here (pointing to the plan) in order to strengthen the foreshore. It was part of the design generally, it was so represented to me, and I enquired on one of my inspections why they were going to do it. I said that it did not appear to me necessary. Then I was told that four or five years previously it had been washed away, but that it had been gradually accumulating for three or four years, and so far from their being any appearance of its being washed away, the whole place was actually choked up by the deposit of shingle. It seemed that one year it went and another year it came, and it appeared much better, as the work was authorized, to go on with it, and complete it, and there let it stand.

1713. (*Colonel Harness.*) Might not an extraordinary storm carry away all the previous accumulation?—I should think so from what I heard.

1714. (*President.*) Do you think that there would be any risk of these stones (which form the voussoirs of the flat arch over the embrasure) coming down if struck by a shot, because the hold is insufficient, in consequence of the very small angle of convergence of the radial joints.—No; but it cannot fail to be perceived that the work would be stronger if the radius had been shorter.

1715. You do not apprehend that there would be any risk of their coming down?—No; it may be considered that it would have been stronger if the radius had been shorter; but I do not apprehend anything. I should mention that there are 24 springers; they weigh 12 tons each, and for every one of those springers the contractor will claim, they have been more than doubled.

Needles Battery.

1716. (*President.*) Is the Needles Battery finished?—Yes.

1717. Is the armament decided upon?—It is at present armed.

1718. The attention of the Committee was attracted to the escarp revetment, which is slightly bulged, do you apprehend that there is any danger of that giving way and of falling?—No; it is solid chalk at the back.

1719. (*Major-General Simmons.*) How is this fort supplied with water?—From the rain.

1720. Are there tanks to receive it?—Yes.

1721. Are they adequate for a good supply?—Not for a very good supply.

1722. Will you be good enough to state the number of gallons and for how many days' supply to the garrison the tanks would contain water?—10,400 gallons in two tanks, affording a supply for about a month.

Hatherwood Battery.

1723. (*President.*) Have there been any failures in Hatherwood Battery?—None.

1724. Is it completed?—Yes, except the fitments.

1725. How is that supplied with water?—There is a well there.

1726. Is there a good supply of water?—Yes.

Warden Point Battery.

1727. Have you any reason to suppose that the damp in the magazine of this battery arises from the soil, or from what other cause?—I think it is the effect of the water, and in fact from the masonry not having been allowed to dry.

1728. You do not think that it arises from defective drainage?—I do not indeed; I think it is a very good magazine.

1729. With regard to the sea wall, what has been done to that?—It has been increased in height and in length.

1730. (*Major-General Simmons.*) Is there any sign of failure in this work at present?—It has only been so recently done that you can hardly tell; it would not appear at present; the man is not paid for it yet.

1731. Is the expense of that wall included in this estimate?—Yes.

1732. (*Colonel Harness.*) Is the toe of it well protected?—Very well protected indeed, by beech piles, and a stone apron.

1733. (*President.*) There has been no failure of the wall, you say, up to this time?—None whatever, and nothing in the shape of failure, because it did not come to that. We saw that the foundations had not been prospectively carried low enough, and I represented that at once. I ordered them to be carried down considerably lower; I reported the matter as the work was in progress, and I obtained an approval of what I had done.

1734. You do not now apprehend any failure to any extent?—No. The wall built along that shore is very good indeed, apparently; the drainage work is not yet completed, and I cannot tell when it will be; it is under Mr. Parkes.

Cliff End Batteries.

1735. (*Colonel Harness.*) Is the wall at Cliff End also well protected?—Not so well protected as it is at Warden Point.

1736. Is it quite secure?—Warden Point is secured by beech piles and a small apron.

1737. Is the wall at Cliff End quite secure?—I should say quite so. Cliff End is differently constructed; there the wall is carried down; it depends entirely upon its own foundation.

1738. Is it sufficiently protected?—It is protected by being sunk and being considerably lower.

1739. Is it sunk into good material?—Yes.

1740. How far is it sunk?—I cannot say exactly, but it is sunk some feet.

1741. (*President.*) How is the wall at Cliff End being completed?—I think considerably below any point that has yet been shown as having been acted upon by a settlement; it is but just completed; it has been completed within the last two or three months, and the contractor is now about to be paid.

1742. The drainage of the slope is not under your direction?—Not in the least.

1743. Do you remember how long the work has been going on?—For three or four years, I fancy; quite as long as that.

1744. No design for the fort has yet been prepared?—No.

1745. (*Major-General Simmons.*) Have you no general supervision of the drainage works?—No.

1746. None whatever?—No.

1747. What amount have these works already cost?—Up to the present time they have cost about 12,000*l.*

1748. What is the acreage to be drained?—Warden Point, 23 acres 1 rood 16 perches; Cliff End, 40 acres.

1749. (*President.*) The amount which is stated to have been expended is 18,000*l.*; has that been entirely expended upon the drainage and upon the sea wall, or has any part of it been expended upon any battery there?—There is no battery at Cliff End; it comes under the loan; it is for securing the site of the battery.

1750. (*Major-General Simmons.*) In fact the 18,000*l.* have been expended entirely in securing and preparing a site for a battery?—Yes.

1751. (*President.*) Is Mr. Parkes carrying out the drainage under contract?—No, certainly not; it is under an agreement to drain it; he has agreed to drain it.

1752. (*Major-General Simmons.*) Is that agreement for a certain sum?—No; he refused to do that.

1753. (*President.*) Have you seen the agreement entered into with Mr. Parkes?—The agreement is only to do the work.

1754. Have you seen that agreement?—No, I have not; but I know from the nature of the accounts that it can only be an agreement of that kind. I know incidentally that that is the style of the agreement; that Mr. Parkes is to do the work, and they are to pay him for it.

1755. (*Major-General Simmons.*) Are the bills made out for day-work?—No bills appear before me, the imprests are for lump sums.

1756. What contract is quoted on those bills?—None whatever; there is no contract that I am aware of. I am told that Mr. Parkes has performed the work to such and such an amount, which is to be noted.

1757. Who tells you that?—The War Office.

1758. Do your officers measure up the work, or check it at all?—Not at all. It is generally stated that so much money has been paid to Mr. Parkes, and I am to put it down in a note in my office.

1759. And you do not see the bill at all?—No; but I believe that that is the way in which it is done.

1760. You never see the bills?—No.

1761. (*President.*) In fact, all the payments are made from the War Office, and they are merely notified to you?—Yes; for example, I was ordered the other day, or not long since, to send forward an estimate for the completion of that drainage. Mr. Parkes's foreman was sent down, and I instructed my Division Officer as to the manner of making it. I tried to obtain from him an answer to a critical question, "What data did you go upon in framing your estimate for the completion of this work?" and he said that he could not do it; he said simply that he had no data, so that the way in which the estimate was made was simply this—I took the whole surface that was drained and completed, and paid for, and I made a rule-of-three sum of it, and measured what was to be done as to the balance to be expended in completing the portion of the work that was untouched.

1762. Was this rough estimate founded simply upon the amount which had been expended upon the other work?—Yes.

1763. (*Major-General Simmons.*) As far as you

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have been able to judge, have the drainage works which have been executed been efficacious?—Yes, I think they have been; but I think that it requires a little more time to prove that what I say is correct.

1764. (*Colonel Harness.*) Have they had the trial of a winter?—Yes; of one or two winters, and I believe that the last winter was the only one in which the failures have not been shown—all the failures of former years, which had been shown had been remedied.

1765. (*Major-General Simmons.*) Were there no failures in the last winter?—No.

Golden Hill Barrack.

1766. (*President.*) Will you be good enough to state to the Committee what the failures in the parapets of Golden Hill Barracks were?—They simply sloughed away.

1767. The parapets gave way, did they not?—They sloughed away.

1768. What was the cause of that sloughing away?—I think it was owing to the material of which they were constructed.

1769. What was the nature of the remedy that was applied?—The remedy which has been applied has been this—a toe of concrete; and they have been re-formed, partly with burnt ballast in layers.

1770. Has the work which has been re-formed been exposed during any winter yet?—No; not yet.

1771. Up to this time, has there been any indication of anything giving way?—I am sorry to say there has been.

1772. In the new work?—Yes.

1773. But it is hardly possible, I presume, to form an opinion as to the permanency of the work until it has undergone a longer trial?—Yes; I should not like to give any opinion now.

1774. (*Colonel Harness.*) In re-forming the earth slopes, have you diminished the inclinations?—No.

Sandown Fort.

1775. (*President.*) The masonry of this fort, I believe, has been completed?—Yes; it is all completed, except the iron-work.

1776. In this fort the main magazine has been very damp, has it not?—Yes.

1777. The flooring has been taken up?—Yes.

1778. Is that now being remodelled?—No; A plan has been submitted for the purpose, but it has not yet been authorized.

1779. Is it now under consideration?—Yes; and in fact for the drainage of the ditch and the whole interior of the fort.

1780. (*Major-General Simmons.*) Is it intended to complete the battery above the casemates by placing iron shields in the embrasures?—This part (pointing to a plan) is completed.

1781. Is it intended to place iron shields in the embrasures over the casemates at Fort Sandown?—That is more than I can tell you.

1782. Are not the merlons behind the cheeks of the embrasures exceedingly thin?—Yes; I think it must be intended to put some kind of iron shields there.

Red Cliffe Battery.

1783. (*President.*) Is there not a considerable fissure in the cliff in front of this battery?—A portion has fallen down; that which you describe as a fissure is now gone; but I do not think it is likely that anything more will go.

1784. You do not anticipate that there will be any further encroachment?—No; it is not washed by the sea.

1785. Do you attribute the failure which has taken place entirely to the action of the sea?—No; I think it is attributable both to the action of the sea, and to the peculiar nature of the material of which that portion of the cliff is composed; it is sandy.

1786. Do you not think that the land springs have had something to do with it?—I think that the outside of the cliff was not of a sufficiently retentive character. I believe that the water that found its way into the sand by its own weight carried away the thin portion of the cliff. On the outside the cliff was extremely thin, and in fact the slope behind that is sand. I think that from the water continually getting into this, it gradually produced an effect, and away the cliff went.

1787. If I remember rightly, there has already been, to the westward of the battery, a very considerable land slip?—Yes.

1788. Was not that land slip caused by the waters from the land loosening the soil?—I presume that it must have been so, as it is not washed by the sea. It is much in the same way as it is at Warden Point, where the pressure of the water is visible, but it is unequal, and it forms into pools; after some time the water gradually gets into the cracks, and away it goes.

1789. You have stated that you do not apprehend any further failure because it is not washed by the sea. Do you not think that what has occurred has arisen from a different cause—that is, from the percolation of water through the soil into the ground upon which the battery is built, which has gradually given way, and slipped into the sea?—Yes; but nevertheless, I think that all that will go, at least for a considerable length of time, has already gone.

1790. Would there be any difficulty in removing the parapet back, in case of any further failure?—There is not space for it.

Puckpool Battery.

1791. (*President.*) Are the works at Puckpool Battery now going on under contract?—Yes.

1792. Do you remember the amount of that contract?—No; the works are to be done by the contractor according to a schedule of prices.

1793. Does the contract embrace the remodelling of the magazines and the alterations necessary for the reception of heavier guns?—Yes.

1794. Have there been any failures in the parapets or in the ditches in this battery?—None at all.

Fort Purbrook.

1795. Have there been any failures in "Purbrook," "Widley," "Southwick," and "Nelson"?—None but those recorded in the historical statement.

1796. These forts, I believe, are all finished, with the exception of the outworks to Fort Purbrook?—Three of them are, and Purbrook is just within completion.

1797. The outworks are not completed at Purbrook?—I do not speak of those; they are not touched at Purbrook.

1798. The main fort at Purbrook is nearly finished?—Yes; it is just being completed.

1799. The other three are completed?—Yes; they are all completed, except the interior fitments.

1800. (*Major-General Simmons.*) Are the outworks at Purbrook essential as part of the defences of the position?—I should say that they are unquestionably.

1801. Are they included in the estimate which I hold in my hand as "present liabilities" for Fort Purbrook?—I think not.

1802. Do the sums which appear in the column, headed "amount required to complete," include "present liabilities," in the second column?—They include present liabilities.

1803. Then, in fact, if you add together the amount required to complete, you will arrive at the total estimate of the work?—Yes; the settlement of accounts as to Fort Purbrook has been in a very unsatisfactory state; however, they have come to an arrangement with the contractor, and he has been paid up to the present time.

1804. (*President.*) He has only been paid, I believe, 51,000*l.*?—In point of fact, he has been paid since that settlement was made, 13,736*l.*

1805. Have there been, in the four forts to which we have alluded, any failures in the ditches or outer scarps?—None whatever.

1806. Has the chalk given way in any places?—Not materially, decidedly not.

1807. Do you apprehend that there will be any risk of any failure from the fire of the guns from the ramparts?—No; I do not think there will be, or nothing material. I am not quite prepared to state what effect concussion might produce upon chalk, but I think it will stand very well.

1808. Is it intended to mount anything heavier than the 7-inch gun upon those ramparts?—Upon that point I am not at all prepared to give any information. I have understood that no heavier gun than the 7-inch gun will be mounted.

1809. Is it true that already a great part of the scarp walls have glided into the ditch?—No; it is not true. It is out of the question; it is all chalk, and there is nothing in either one of them that could glide.

Fort Wallington.

1810. Will you be good enough to explain to the Committee the failures that took place at Wallington, and the measures that were adopted to remedy those failures which took place?—The failure that I am particularly conversant with was the last, and that has been repaired; that was the escarp wall.

1811. On what face of the battery?—The west face.

1812. Will you just state what happened to that escarp wall?—The wall was thrown bodily forward on its toe from the foundation to the top of the wall.

1813. (*Major-General Simmons.*) Did it turn over on its toe?—No; it did not slope like the lid of a box, it ran forward.

1814. (*President.*) To what do you attribute that?—In the first place I attribute it to the nature of the soil at the back, and that it was badly drained. Again, I think that the foundation was not carried down sufficiently low. I attribute it quite as much to the section, as to any other cause. If it had been a good section, I think it would have stood all the pressure that was brought against it.

1815. In what respects do you think the section was defective?—I think that the rear face of the section being plain was a bad mode of construction.

1816. Would you have had it stepped back?—Decidedly.

1817. The soil was principally composed of mottled clay, was it not?—Yes; nasty, slimy, greasy clay.

1818. When the failure took place what measures were adopted?—The back was exposed, that is, the back of the foundation was reached, and concrete was placed there. A toe of concrete was placed behind it much below the original foundation. I believe that the section on the table shows it.

1819. Have they excavated all the clay above the chalk, and filled it up with concrete?—We excavated until we came to the foundation of chalk.

1820. You removed all the clay, and filled it up with concrete?—Yes; and we got a good footing into the chalk.

1821. What distance did you carry the concrete back from the escarp wall?—This plan (pointing to the same) shows the concrete as it was placed all along there (describing).

1822. But I mean the distance to which the concrete was carried back from the wall?—It was carried back to a distance of 7 feet or 8 feet, 8 feet behind the counterforts, the interior was all filled up.

1823. (*Major-General Simmons.*) In fact you increased your wall from a thickness of about 7 feet to a thickness of about 14 feet with counterforts behind?—There was a plan sent down from the War Office with certain orders, and that was to be carried out. The only deviation from it was that I considered it had not gone deep enough. I did not commence to carry out the work as they had authorized it, inasmuch as I went down much lower. This was still upon the clay (pointing to the plan), and I said that I considered the foundation should be below the clay altogether, and I went down lower.

1824. (*President.*) Do you consider that the measures which have been taken have made that wall perfectly secure?—Yes.

1825. (*Colonel Harness.*) None of it has fallen down at any time?—None of it.

1826. (*President.*) There was also a slip on the parapets, was there not?—There was a subsidence.

1827. You are not aware that there is at present any probability of any further giving way in the escarp wall, or anything of that kind?—No

1828. Is the work which is now going on at that fort being done by contract?—The contract has come to an end.

1829. Is the work now being carried on under the direction of Engineer officers?—It is not being carried on at all; the work is stopped.

1830. Was the putting in the concrete done by Engineer officers?—No; that was done under contract, but since that work was done, the contract has come to an end. They had done all the work up to the end of the contract, and now the completion of the work on the slopes and other work is to be done by military labour.

1831. But it is not going on at present?—No; nothing is going on now.

Hilsea Lines.

1832. Are the Hilsea Lines being completed under contract?—Yes.

1833. Has there been any failure in the earth-

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work on the Hilsea Lines?—No; nothing has been reported which is considered a failure.

1834. Have there been any slips into the ditch?—No. The ditch is 100 yards away from the parapet.

1835. The completion of those lines has been much delayed by the failure of the contractor. has it not?—Yes.

1836. When was the present contract made?—It was made about a month since.

1837. Then the last contract with Messrs. Smith, Knight, & Co., was closed in November 1866, in consequence of their failure?—But since that time another person has taken up the contract to complete their work, and that has been going on up to the present time.

1838. (*Major-General Dickson.*) At what date did the last contractor take up the contract?—I cannot give you the exact date, but it must have been, I think, in 1867.

1839. (*President.*) Have these delays had any prejudicial effects upon the embankments that were made?—I should say that in the nature of things they would have that tendency upon an unfinished earth-work. I think the effect would be to damage them more or less. The action of rain and heat would more or less injure them.

1840. On the other hand, would not one effect of the delay be that the works would become much more solid?—Yes: that would be those parts that were not injured.

1841. The delay has been caused by the failure of the contractors?—Yes.

1842. A new road has been formed with a rolling bridge; has that been completed?—No; it is not completed, but there is a bridge there.

1843. Has there been any difficulty as to that bridge?—Yes; and the difficulty was that the trustees would not take it over. I mean the road trustees.

1844. What was the cause of that?—The causes were, as far as they stated them, that, supposing the bridge to be effective in other respects, with regard to strength and so on, it was not wide enough.

1845. Do you remember what the width of that bridge is?—I think that the bridge is from out to out 9 feet, between the girders and the roadway.

1846. Do you mean that it would admit of the passage of a carriage 9 feet wide?—Yes; and not more.

1847. (*Colonel Harness.*) Was that bridge put there to replace another bridge?—Yes, the existing bridge on the old London Road.

1848. Then this is the road (pointing to the plan) that has been substituted for the road which was taken away?—The road to be taken away. This (pointing to the plan) when completed, will be handed over to the road trustees, and the War Office will take over the old one.

1849. At present the road trustees object to take over the new bridge?—Yes.

1850. (*Major-General Simmons.*) Over which ditch is the new bridge placed?—Over the New Cut over the gun-boat channel.

1851. What is the width of the opening in that bridge?—60 feet.

1852. What draught of water is there in the channel?—It is supposed to be for a gun-boat, 8 or 10 feet.

1853. Will it hold as much?—Yes.

1854. Is the completion of the front ditch included in the estimates?—Yes.

1855. (*President.*) As I understand you, between the end of Langston Harbour and the end of these lines at Fort Purbrook, there is some plan for the erection of another fort?—Yes; but that has been altered again, I believe.

1856. The object being to protect the opening between those lines and Fort Purbrook?—Yes

1857. Nothing has been done with regard to it yet?—No.

1858. A number of the gun casemates intended to flank the lines have been closed by placing earthen merlons in front of them?—Yes; the alternate embrasures have been blinded.

1859. Being intended to flank those ditches, have they been so reduced in number as to make them insufficient for the purpose?—No, I do not think it is so; the alternate guns are now kept in reserve; but at all events it would be very easy to increase them if it were required.

1860. There is no limit, is there, to the amount of fire that you might provide along the curtain?—No.

1861. Do you consider that a flanking fire, as it would be now, with half the embrasures closed, would be sufficient for that purpose?—Yes; I do.

1862. Was the closing of those embrasures at all in consequence of there not being sufficient room to work the guns?—No; it was done purely to strengthen the work, and to create a protected reserve.

1863. You think that there is no doubt that the space in this gun chamber (pointing to the plan) would have been sufficient for any guns that might have been required in that position?—Yes; I think so.

1864. (*Major-General Dickson.*) The interval between the guns was something like 22 feet?—Yes; it will be 44 feet between the two, from centre to centre, of those that are opened.

Gosport Advanced Line.

1865. (*President.*) Have any failures occurred in the forts on the Gosport Outer Lines; for instance, at Brockhurst?—Nothing, except as reported in the historical statement.

Fort Fareham.

1866. What are you doing at Fort Fareham?—Nothing is being done.

1867. It is not yet completed?—Not quite.

1868. The haxoes are not quite completed, are they?—No; the parapets are not raised.

1869. Is it proposed to make any traverses to defilade the casemates?—There have been one or two propositions as to that, but nothing definite has been decided upon. There is a proposition, but it is not yet mature, I fancy, to make a kind of keep.

1870. Is not Fort Fareham entirely isolated from the other forts; that is to say, it is not flanked or covered by the others?—It is considerably in advance of Elson.

1871. Can you see Elson from it?—Yes, you can see it, but it is a considerable distance from Fort Elson, and also from Fort Wallington.

1872. Between Fort Wallington and Fort Fareham there is the whole town of Fareham?—Yes.

1873. Does not a creek run up a considerable distance between them?—It runs into Fareham.

1874. So that, in fact, one fort can hardly be said to support the other?—Not strictly so.

1875. In the original plan was it not intended to have two other forts?—There was a proposition to construct two works between Fareham and

Southampton water, and also for an advanced fort, but I have never seen the plan.

1876. (*Major-General Simmons.*) Is the ditch at Fareham intended to be wet?—Evidently.

1877. By what means will it be filled?—No arrangements have been made distinctly for filling it. A project was prepared for filling it by a steam-pump from Fareham Lake, and also from Stoke's Bay:—the nature of the soil would lead you to suppose that there was a great deal of water surrounding it which might by pipes be brought into the ditch, but I have not heard of any definite plan of filling it; there is water in it now.

1878. What depth of water?—Very little.

1879. (*President.*) Have any failures taken place in the parapets of these forts?—Slight failures have occurred.

1880. Have there been any subsidences to any great extent?—No; there is one in the ravelin to a slight extent; one or two of the retaining walls are supposed to be doubtful.

1881. There have been no serious failures?—No.

1882. (*Major-General Simmons.*) Was not the failure you have referred to, caused by the premature filling in of the earth?—Yes; it slightly gave way, but it has subsided now, and it seems to be strong enough; it has not since shown the slightest symptom of giving way.

1883. (*President.*) Have any expenses been incurred in repairing the failures in these forts?—Very trifling.

1884. Are you aware what the substratum below these forts is?—It is that nasty, slimy clay; it is called "blue slipper."

1885. Has the pressure of the earth forced it up in the ditches?—No, not in the ditches. It has affected the foundation slightly, but not to any very great extent. The ravelin is the only place where there is anything visible; that has slightly canted, but that has all been repaired; it is all right now; that was the only subsidence.

1886. (*Major-General Simmons.*) Do all these slopes (pointing to the same) stand well?—Yes, pretty well; they are not yet quite finished.

1887. (*President.*) Are the parapets in such a state that the Moncrieff gun could be applied to these forts?—Yes, decidedly, if I understand correctly what the Moncrieff gun is intended to do.

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Stokes Bay Lines.

1888. These lines are protected by a wet ditch, are they not?—Yes.

1889. Is not the slope formed of concrete?—It is faced with concrete.

1890. I observed that in one or two places, where there was an angle, the concrete had broken away; has there been any serious failure of that kind?—No.

1891. Is the armament of these lines to be remodelled?—I should think so decidedly, because they are all old guns that are there now.

1892. (*Major-General Simmons.*) Is no further expenditure likely to take place on Grange, Rowner, and Brockhurst Forts?—Not unless the armament is changed.

1893. Are these forts considered to be completed?—Yes.

Gilkicker Battery.

1894. (*President.*) Is this work still in the hands of the contractor?—Yes.

1895. It is approaching completion now, is it not, so far as the masonry goes?—Yes.

1896. Have you received any instructions yet as to the shields?—No.

1897. No preparations have been made for them?—No, nothing beyond a slight formation.

1898. Have there been any failures in Gilkicker Fort?—None whatever.

1899. (*Colonel Harness.*) Is not something necessary to be done to secure the foreshore at Gilkicker?—No, it is perfectly secure.

Lumps Battery and Eastney Batteries.

1900. (*Major-General Dickson.*) Have any arrangements been made in these places for enlarging the accommodation for artillery stores?—There has been no proposition that I am aware of at present.

The witness withdrew.

Major James Bevan Edwards, R.E., examined.

1901. (*President.*) You are employed upon the Hilsea and Portsdown Hill works?—Yes.

1902. How long have you been employed upon them?—Nine months.

Hilsea Lines.

1903. It appears that these lines have been in the hands of several contractors?—Yes.

1904. Has the delay in the completion of these works been caused to any extent by the failure of those contractors?—Yes, for a considerable time, by the failure of Mr. Wheeler.

1905. Previously to that, other contractors had been employed, who, I believe, also failed?—No; Mr. Wheeler's was the only failure which occurred.

1906. In what state were the lines when you took charge of the district?—They were about two-thirds completed.

1907. Was the gun-boat channel nearly completed at that time?—Yes; that is to say, the dams were not removed and a part of the channel about the Old London Road.

1908. The earthworks for the parapets had been formed, but not raised to their full height, I believe?—Yes; they required additional material.

1909. Was that additional material obtained from the ditch and the gun-boat channel?—The additional material for the ramparts is now being obtained from the ditch at the east end of the channel, about the old London Road, and in front of the curtains.

1910. Did none of the material come from the excavations made by the deepening of the channel?—No.

1911. Was the material that came out of the channel good for the purpose of forming the earthwork?—It is hardly to be called a good material, although eventually it made a very solid rampart. It is brought out in a wet state, but when dry gets hard and firm; but it slips a good deal before it is dry, and has to be put up again; eventually it gets as hard and solid as possible.

1912. Do you consider that the delay which has occurred has been prejudicial to the earth-

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works and to the formation of the ramparts?—Not in the least, but rather the reverse, because the earth has got firm, and the ramparts have become more solid than if they had been formed at once. If they had been put into shape immediately, slips would have constantly occurred; whereas now, from having been formed gradually, and allowed to dry, there is very little probability of slips occurring.

1913. At what slope are you forming the face of the earthwork?—The exterior slope is 41° 45′.

1914. Is the work now going on done by contract?—Yes; there is a lump sum contract to complete the whole of the earthwork of the lines throughout. The amount is 20,185*l*.

1915. (*Major-General Simmons.*) Is that sum dependent upon measurements?—No; it is a lump sum contract.

1916. Is it final?—Yes; for completing the earthworks. There are some parts of the work under the old contract still going on, but this contract for 20.185*l*. is to complete the whole of the ramparts and the earthwork throughout. They are to be sown with grass-seed and drained, and completed except the metalling, which is not now considered to be necessary. The contractor is responsible for slips and any failures that may happen before the 31st December, 1869. He is bound to finish his contract by that time, and I have every reason to believe that he will be able to do it thoroughly and efficiently.

1917. The Committee observed that there had been two slips at these points (pointing to the plan)?—Yes.

1918. Does the expense of putting those slips to rights fall upon the contractor?—The cost of putting them to rights is included in the new contract, those slips were due to causes quite uncontrollable, where the new work crossed the ditch of the old fortification.

1919. In one place, where they were re-forming a slope, they were re-modelling a good deal of the surface of the earthwork, in order to re-form that slope; do you consider that there will be any risk of any slip taking place, in consequence of the removal of that part of the face which they are now taking away?—No, I do not think slips of any consequence will take place, although for some years to come, until the whole of the earthwork has quite settled, small slips may possibly take place in different parts of the Lines.

1920. What is the vertical height of that slope which stands at 41° 45′?—26 feet.

1921. Is not that rather a steep slope for so great a height? Unless the materials are very good, will it not be likely to slip in a wet winter?—It is the usual slope for works of fortification of this kind, and when covered with grass and vegetation I do not think it likely to slip.

1922. The material consists chiefly of clay, does it not?—Yes; clay mixed with chalk, and when dry it will stand almost vertical till the wet gets into it. When covered with 9 inches of good surface soil, and the grass grown, there is no fear of the wet getting into it so as to move it; this has been proved by the heavy rains which have fallen during the last few days. Where portions of it have been covered, the rain has not affected it, but where it is not covered it gets soft and spongy, and it would exfoliate away if it were not covered, in the course of time. I should like to qualify what I stated about a slope of 41 degrees, because it requires great experience to be able to say whether a slope would stand or not at that inclination, but I think that it will stand in this case. When I first went there, the whole of the ramparts were formed in rough at that slope, according to the original design, and no change could then be made in it without a very considerable addition to the quantity of material over the whole lines, and consequent additional expense.

1923. (*President.*) You do not apprehend any failures in these lines more than you might naturally expect in any similar length of earthwork of the same kind?—Certainly not.

1924. They have now closed every alternate embrasure, and are putting earthen merlons in front; was that done before you went to the place?—No.

1925. Was it done upon your recommendation?—No; it was suggested by Colonel Jervois.

1926. Can you state what the motives were which led to that alteration?—These casemates were designed before the introduction of rifled artillery, and were out of the range of fire from the summit of Portsdown Hill. The merlons of earth were originally placed between each embrasure to cover the masonry, but they were hardly thick enough, and every alternate embrazure has been blocked and a solid merlon placed between the alternate guns, a plan which is often adopted on the continent, as at Monte Croce, a fort in front of Peschiera; at Rovigo, &c. If the open embrasures are damaged by an enemy's fire, the merlons can be removed and a new battery could be brought into play; the old ones being covered up by the removal of the merlons, and if desirable, repaired. Excellent bomb-proof cover is obtained by this method, while new and uninjured defences are thus reserved for an advanced period of the attack.

1927. Was it considered that the embrasures were originally placed too close together to admit of the proper working of the guns?—Certainly not; we require but very little lateral range for these guns; they do not come into action until the enemy has reached the counterscarp and is attempting to cross the channel and ditch; consequently scarcely any lateral range is required.

1928. What is the distance between the embrasures?—21 feet.

1929. (*Major-General Simmons.*) Are not all of these guns intended for flank defence?—They are all intended for flank defence; three flanking the ditch, and the others the ground between the channel and the ditch; they are not intended for any distant fire whatever, nor are they exposed to it. Guns for distant fire, and to command the country, would be placed on the ramparts.

1930. (*Colonel Harness.*) But at the rise of the hill and below the hill it would bear?—You can perhaps see a little of that ground from the embrasures, but it was never contemplated to place guns of long range in these casemates. The great object would be to conceal them as much as possible, and not to allow them to open fire until they were actually required to do so by the enemy attempting to force the passage of the channel and the ditch; they are simply for flank defence.

1931. (*Major-General Simmons.*) What is the thickness of the merlon at the top in front of the Haxo casemates?—11 feet of earth, and the front wall is 4 feet 1½ inches thick.

1932. (*Colonel Harness.*) You have said that the works are to be completed by the present contractor for something over 20,000*l*., but in the

paper before me it is estimated that a further sum of 9,000*l.* will be required, what does that include?—That is for work under the old contract, not yet completed; there are various services under the old contract which are not yet done, such as the formation of a military road, which is only yet partially executed, for laying on water, and for the fitments of the barracks.

1933. The remainder is for some work not included in that contract, but which is due to a former contract?—Yes.

1934. (*Major-General Simmons.*) What is the breadth and depth of the navigable part of that channel?—The breadth is 105 feet at the bottom, and the depth 13 feet at high water spring tides.

1935. (*President.*) As I understand, you would only extend the deepening of the channel as far as the lines at each end?—That is all. The channel, as I understand, was excavated to obtain material for the ramparts, and to improve and widen the old channel, so as to make it practicable for gun-boats.

1936. (*Major-General Simmons.*) Is that channel completed on its flanks towards the sea?—It will be to the dams on each side, which are to be left until the completion of the work. It would be of no use to remove them until the channel is extended into Portsmouth and Langston Harbours, because the new channel would silt up.

1937. The tidal water does not come in at present, does it?—No.

1938. (*President.*) Is it not intended to divert the old London road, and close that part of the line?—Yes.

1939. Has any discussion arisen with reference to that?—Yes; a new bridge has been constructed; but the road trustees require a double road way of 12 feet clear in each. The bridge was originally made 9 feet, and is now being widened to 12 feet.

1940. Have there been any settlements or failures in the brickwork of these Lines?—There is not a single settlement in the brickwork of any sort or kind; I believe it was stated in a debate in Parliament, referring to these Lines, that they were a sand-covered mass of ruins. That statement is altogether incorrect. The only failure which has taken place was that of the contractor; and the only settlement, that which he effected with his creditors.

Portsdown Hill.

1941. The forts from Purbrook to Nelson are in your district, are they not?—Yes; to Wallington also.

1942. In the first four have there been any failures?—There was a failure in some brickwork at Southwick, owing to a heavy and unexpected fall of rain.

1943. Did that arise from any failure in the foundations?—No.

1944. Has anything given way in the escarp walls?—Not in those forts that are built upon the chalk; there has been no failure whatever in the escarp walls.

1945. The escarp walls have not glided into the ditch?—No, certainly not; they are firmer than when they were built.

1946. Do you apprehend that the fire from any guns of whatever size from the ramparts would have any effect upon those escarp walls?—None whatever.

1947. Has any provision been made for lighting the main passages leading to the main magazine under the parade, or from the main magazine to the battery?—The fittings for these works have not yet been provided; the arrangements necessary for lighting will be executed when this service is undertaken. *Major J.B. Edwards, R.E.* 21 Aug. 1868.

1948. There would be no difficulty in lighting the passages?—Not the least.

1949. (*Major-General Simmons.*) How are all these forts supplied with water?—They are all supplied from a large spring of water in the rear of Fort Purbrook, which is inside the lines, and was formerly the source of supply for the town of Portsmouth. The Portsmouth Waterworks Company now obtain their water from Bedhampton, and they have made arrangements that this spring should be available for the supply of our forts alone.

1950. Is this spring you refer to within the lines?—Yes; it is in the rear of Fort Purbrook, and the Waterworks Company have undertaken, I believe, at a certain rental to supply all these forts with water from this spring. The water is pumped to large tanks in all the forts. The pump is at Farlington, in the the rear of the lines, at the foot of the hill.

1951. Has the work proposed by the Defence Commission, near Langston Harbour, been designed?—I have seen a general plan of it; but I am not aware that it has been designed in detail.

1952. Is the land purchased for it?—Yes.

1953. Does not that seem rather an important work to construct, if your water supply is to be protected by it?—Certainly, and I have no doubt that the position would be occupied whenever the Portsdown Line is placed in a state of defence.

1954. (*Colonel Harness.*) Has the well in the rear of Fort Southwick furnished you with any water?—A certain quantity of water was obtained from it, but when the agreement with the Waterworks Company was made, the sinking of it was discontinued.

1955. (*President.*) At the present time the arrangement is to obtain a supply of water from the spring you have mentioned?—Yes.

1956. (*Major-General Simmons.*) Have the outworks in front of Fort Purbrook been commenced?—The ditches are partly excavated.

1957. Does the estimate under the head of "Fort Purbrook" include the cost of completing those outworks?—Yes; it includes the expense of completing them.

1958. Were no barracks intended for either of those outworks originally?—Only a few casemates under the terreplein.

1959. Is there not a hill in front of Crookhorn, which affords a good deal of cover, and is it intended to cut down that hill, or to extend the works in any way so as to open that ground?—Nearly the whole of the ground in front of Crookhorn is seen into from Port Purbrook and the Farlington Redoubt.

1960. (*President.*) The soil that you have to deal with at Fort Wallington is very different from that which you have found at the other forts?—Yes; it is just off the edge of the chalk.

1961. Will you be good enough to describe the failure that took place in consequence of that?—When the ramparts were nearly finished the escarp wall on the left face, and also the flanking chamber to the north of the west caponnière, gave way to a certain extent. The escarp wall for

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about 300 feet bulged forward from the centre both ways. In the centre, the bulge was 9 inches at the top. That was caused by the nature of the soil behind it, which consisted of a succession of layers of clay and of gravel, and from the weight of the ramparts when saturated with moisture, this weight caused the whole mass to move, and to push the escarp wall slightly forward. In the left flank the wall also bulged in a similar way, but only to the extent of 4½ inches in the centre; no part of either wall fell.

1962. (*Major-General Simmons.*) Were the ramparts carried up to their full height and completed?—Yes; but they were not soiled

1963. (*Colonel Harness.*) It was a mass of clay?—Yes. The wall was repaired, and strengthened by adding concrete in the spaces between the counterforts, and dry packing between the counterforts and the clay. The wall has not moved since, and in my opinion never will.

1964. Did you go down to the back of the wall?—Yes; right down on to the chalk.

1965. Did that carry you down quite to the bottom of the foundations?—Yes.

1966. Did you also put in drains?—Yes; we put a drain in at the back of the dry packing. The dry packing is burnt clay, made on the spot.

1967. You do not apprehend that there will be any further failure?—No.

1968. Are any of the other faces of the fort exposed to the same danger?—No; because they are built upon chalk. The cost of repairing and strengthening was 7,161*l.*, and what increased the amount considerably was that there was not time to take up a special contract. We had to do it by day-work.

1969. (*Major-General Simmons.*) Was there any yielding in the walls of the escarp galleries?—No; the arches only gave way in the rear of the escarp galleries.

1970. Were they crushed?—They were not crushed. The giving way of the escarp wall caused the joints of the brickwork in the arches to open, but only a few bricks fell.

1971. Has there been any slip in the traverses in Fort Wallington?—In the parados there has been a slip, a very unimportant one, such as you might naturally expect from the nature of the soil.

1972. (*President.*) Are you now completing Fort Wallington?—At the present time arrangements have been made, I believe, to complete it by military labour, but nothing is going on at present.

1973. Are all the contracts for the other forts closed?—The other forts are now nearly all completed with the exception of the fittings.

1974. Are those fittings included in the contract?—No.

1975. As far as the contract goes they are completed?—Yes.

1976. Has any contract been entered into for the outworks at Fort Purbrook?—Not yet.

1977. Have the ditches been excavated by contract?—Yes; that was done some years ago.

1978. But no contract has yet been made for the works?—No; not yet.

The witness withdrew.

(*Adjourned till Thursday next at* 11 *o'clock.*)

Tuesday, 27th August, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Lieutenant-Colonel EDWARD BELFIELD, R.E., examined.

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1979. (*President.*) You are Commanding Engineer in the Portland district?—Yes.

1980. How long have you been there?—Since the month of November of last year.

VERN CITADEL.

1981. I will take the defence works in the order in which they stand in the printed paper, and begin with the Vern Citadel. The works on that citadel are, I believe, now entirely done by convict labour?—Yes; almost entirely. A few civilians are employed on the tramways, in charge of the horses, wagons, &c., but everything else is done by convict labour.

1982. How many convicts are generally employed upon the works?—Between 600 and 650.

1983. How are they appropriated, or upon what works are they principally employed at the present time?—The principal works upon which they are employed at the present time are the officers' quarters and the Provost establishment.

1984. (*Major-General Simmons.*) Are those works paid for out of the Loan?—No, they are not. The officers' quarters and the Provost establishment are not being done under the Loan.

1985. (*President.*) What works are the convicts employed upon in the citadel?—The officers' quarters, the main entrance, the south-west caponnière, the west front, and a few on the interior formation of the ground.

1986. Have you made any calculation as to the time that will be required, with the present amount of convict labour, to complete the citadel?—With the present force, if the glacis is to be formed in a very complete manner, I should think it would require about eight or nine years, but it is almost impossible to say precisely.

1987. There is some heavy work in the formation of the glacis, is there not?—Yes.

1988. Is that principally on the west front, or where is it?—It is in front of the south-west and south-east ditches, and the west ditch.

1989. Is the armament for the citadel yet decided upon?—It is not.

1990. Has provision been made for the magazines, and arrangements for all the flanking galleries?—The magazines are all decided upon, with the exception of any that there may be to the north-east.

1991. No armament has yet been proposed for the north-east?—No armament has yet been decided upon. A project was got out for this (pointing to a plan) some time ago, on a very extensive scale, but no decision was come to upon it.

1992. (*Major-General Simmons.*) Does the amount which was authorised under the Loan for defences, and which for the Vern Citadel is stated at 127,000*l.*, include the expenditure for the auxiliary batteries below and in the rear?—It does.

1993. According to the printed statement, there would appear to have been a balance only, a year ago, of about 4,600*l.*; do you imagine that that would cover the cost of all the material necessary to complete the work, and to put it into a fit state for occupation as a fortress?—I think it would be insufficient.

1994. Have you any estimate of the amount that would be required to complete the citadel?—I have already handed in an estimate of about 11,000*l.* for the citadel itself.

1995. Exclusive of the lower batteries?—Yes.

1996. (*President.*) That is for the citadel alone?—Yes.

1997. Is the sum under the Loan at all divided between the citadel and the batteries? I find them stated in the Schedule in a lump sum?—It is in a lump sum; it has not been divided in any Schedule that I have ever seen.

1998. (*Major-General Simmons.*) Does that 11,000*l.* provide only for the material to be used with convict labour, or does it include any civilian labour?—It includes the small amount of civilian labour that we at present employ.

1999. Do you mean for supervision?—It is not for supervision, but it is for men who are in charge of the wagons and horses—breaksmen—those being duties not performed by convicts.

2000. And the hire of horses?—Yes.

2001. What is the amount authorised in the provision for fortifications under the Act of 1867?—125,000*l.*

2002. It would appear then that the balance, instead of being 4,600*l.*, would only be 2,600*l.*?—Yes.

2003. Does that sum of 11,000*l.* include anything for the officers' barrack in your estimate?—No.

2004. What is the cost of that barrack?—I cannot say at the present moment what the total cost is. It was commenced under the loan, but in our present year's estimate we have the sum of 2,000*l.* for completing it, out of the annual barrack estimate.

2005. What was the expenditure out of the loan on that barrack?—I cannot say off-hand, but something small.

2006. (*President.*) Is it included in the sums which appear in the column headed "Amount expended"?—It is included in that. I should think that 300*l.* would certainly cover it.

2007. Does that sum of 11,000*l.* include all the battery fitments, such as racers for the guns and Artillery side-arm sheds, and such like arrangements?—Yes; everything in the citadel.

2008. As I understand you, the whole sum which is appropriated by the Schedule of the Act, for the citadel and batteries, is 125,000*l.*?—Yes.

2009. And there is only 2,580*l.* of that amount now remaining?—Yes.

2010. It will require 11,000*l.* to finish the citadel, without reference to the batteries?—Yes.

2011. Therefore the whole of the batteries will still have to be provided for in addition?—Yes.

2012. (*Colonel Harness.*) Is there no work which is included in this account of expenditure, as chargeable to the Ordnance Annual Estimates since 1861?—None.

2013. What sums have been expended on account of the Ordnance Annual Estimates on this work since that time, because the Provost Establishment is reported to have been authorized in 1867, and to be charged to the Barrack Estimate. Does it stand in the amount expended for that year under the loan for defences, or has it been taken out of it?—The Provost Establishment was only commenced in 1867, and the expenditure that was incurred in that year still stands.

2014. In this amount, which is charged against the Loan?—Yes.

2015. Therefore that amount is to be taken out of the 122,000*l.*?—Yes.

2016. Are there any other sums that have to be taken out?—The commencement of the officers' quarters.

2017. What will that amount to?—It may be 300*l.*

2018. Not more?—No.

2019. (*President.*) Have there been any failures in the citadel?—None whatever.

2020. (*Major-General Simmons.*) Does the sum of 11,000*l.* also include the drawbridge and arrangements for it?—It does not. The drawbridge is provided for separately in the Fortifications Estimate of this year.

2021. Then that is to be added to the expense incurred under the loan in order to obtain the total cost of the citadel?—Yes.

2022. (*Colonel Harness.*) It will not be charged against the Loan?—No.

2023. (*Major-General Simmons.*) Is the standing part of the bridge charged against the loan?—There will be no standing part of the bridge.

2024. What will be the opening of the drawbridge?—14 feet 6 inches; I am alluding to the drawbridge at the south-west caponnière.

2025. Is the bridge at the main entrance charged against the estimate of 11,000*l.*?—Yes.

2026. What is to be the nature of the bridge?—There is nothing yet decided.

2027. Does that estimate of 11,000*l.* include the completion of the fitments for the guns, such as are within that casemated flank, and the flank that faces the south-west?—Yes, it includes all the fitments.

2028. How many guns does it provide for upon that flank?—16 guns in all, including those flanking the South Ditch.

2029. Does this return, dated 24th October, 1866, showing the guns required for the works, represent correctly the armament as it is now intended to be?—Paragraph 18 in the Memorandum, already furnished to you by me, says, "No armament has yet been definitely decided upon." That shown in Appendix A was suggested in 1866, but no decision has been given on it.

2030. Do you think it necessary to put 16 guns in that casemated flank (pointing to the plan)?——It is an important position.

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East Weir Auxiliary Batteries.

2031. (*President.*) Is No. 1 yet traced out?—It is not; it has been postponed on account of the slipping of the adjacent ground, and that ground has been drained. The intention was to leave the execution of that battery as long as we could.

2032. (*Major-General Simmons.*) When did that slip take place?—It occurred at the end of 1864.

2033. (*President.*) Has it been left with the view of considering what additional drainage is required?—No; it has been left with the view of seeing whether the drainage which was executed in the neighbourhood permanently answered its purpose.

2034. So far as you can judge, do you apprehend that there will be any difficulty in finding a firm foundation for that battery?—I think it is so far doubtful that we do not propose to commence any masonry work until we have satisfied ourselves about it.

2035. (*Major-General Simmons.*) What is the total estimated cost of that Battery, No. 1?—1,990*l.*

2036. Does that include the magazine?—Yes.

2037. And all the fitments?—Everything.

2038. Does it also assume that it will be executed by convict labour?—Yes.

2039. (*President.*) The next in order is No. 6, the 3-gun battery; is that commenced?—It is not commenced yet, it is just going to be commenced.

2040. The site is fixed upon, but the battery is not yet traced out?—It is just being traced out.

2041. (*Major-General Simmons.*) The slip you have referred to is the only one which has occurred?—Yes; but the same cause which led to the postponement of No. 1 Battery has induced us to defer the commencement of this one. I have no fear for this battery.

2042. What is the estimated cost of Battery No. 6?—610*l.*

2043. (*President.*) Is Battery No. 2 now in progress?—It is completed with the exception of cutting the embrasures, and the formation of the gun portions; the magazine is completed.

2044. Have you received orders to cut the embrasures, or are they to be left?—I have orders now as to the mode in which batteries Nos. 2, 3, 4 and 5 are to be completed, with the exception of the pivot gun portions.

2045. (*Major-General Simmons.*) For what description of carriage are you completing them?—For the 12-ton gun; but we have received no instructions as to the carriage. We have received plans of the racers that are to be laid down.

2046. Then the parapet will be constructed for any variety of traversing platforms?—Yes, with embrasures.

2047. Can you furnish the Committee with the levels of the terrepleins of those batteries above mean tide level?—It is as follows, taking them in the order in which they appear on the plan:—

Battery No.	1,	about	160	feet	
„	„	6	„	210	„
„	„	2	„	205	„
„	„	5	„	130	„
„	„	3	„	220	„
„	„	4	„	220	„

2048. What is the estimate for No. 2?—I have not separate estimates for these four batteries, but for completing Nos. 2, 3, 4, and 5, it is 1,538*l.*

2049. (*President.*) I understand that there has been no slip in any of those works, Nos. 2, 3, 4, and 5?—None whatever.

2050. Was the drainage for those batteries carried out with the money provided for under the Loan?—Yes.

2051. Is it included in the abstract of the expenditure?—Yes.

2052. What is the total estimate for those batteries at the present time?—The total of the whole six batteries?

2053. Yes?—4,000*l.*

2054. Then that has to be added to the sum of 11,000*l.*, making the total required 15,168*l.*?—Yes.

2055. (*Colonel Harness.*) May not that estimate be subject to some modification caused by some change in the design for putting the guns into the batteries?—I do not think very much, because a little money goes so far with convict labour.

2056. (*President.*) How are Vern Citadel and the batteries supplied with water?—The water is pumped into tanks within the Citadel from the end of the island, the total tankage accommodation being about 430,000 gallons.

2057. Where are the pumping arrangements for pumping that water up?—It is pumped up by a steam-engine belonging to and worked by the Admiralty at Chene, near the south end of Portland.

2058. What means of protection are provided to prevent that supply from being cut off?—There is no protection, except that it was made bomb-proof. The engine is put in a bomb-proof construction, but there is no attempt at defence.

2059. Could not a party landing in West Bay cut off that supply of water?—They might perhaps disconnect the pipes.

2060. Could they not destroy the engine itself?—Yes; if unopposed by the garrison of Portland.

2061. Is the rain water from the roofs of the houses collected in tanks?—Yes.

2062. They would have that supply of water in addition?—Yes.

2063. (*Major-General Simmons.*) In the report of the Defence Commission, the original estimate included works at Dorbell Point and Blacknor Point; has anything been done at those two points?—Nothing whatever.

2064. Has not the land been purchased?—Not that I am aware of.

2065. Has any plan been drawn out for occupying the ground?—I know of none.

2066. In fact those two works appear to have dropped out of the estimates?—Yes.

2067. I believe it was also contemplated in the original designs that there should be some batteries outside the citadel on the west side, looking over Chesil Beach to seaward; has anything been done in respect to those batteries?—Nothing.

2068. Has the ground been purchased for them?—Not that I am aware of.

2069. In the report of the Defence Commission those batteries were contemplated to bear on West Bay, and upon the approach landward by Chesil Beach, and they appear also to have dropped out of the estimates?—Yes; I have received no instructions with respect to them.

Inner Pier-Head Fort.

2070. (*President.*) This fort was built entirely by the Admiralty, was it not?—Yes, entirely.

2071. How long has it been taken over by the War Department?—About six years.

2072. Was there not a failure in the floor of the magazine, from a pile-head having come up?—Yes.

2073. Did that happen since you have been in command?—No.

2074. Has that been remedied?—Yes; it, with work done at the same time at other pile-heads, was remedied at a cost of about 12*l.*

2075. That pile coming through the floor showed that there was some settlement going on, did it not?—Probably.

2076. I believe there has been no unequal settlement—nothing to crush the masonry, or to cause any damage?—There are slight cracks in the masonry.

2077. (*Major-General Simmons.*) Did the settlement take place after a gale of wind?—Yes; it was first observed after a gale, I think.

2078. (*Colonel Harness.*) Is the whole foundation on piles?—No; it is on blocks of stone, similar to the foundation of the breakwater—loose stones.

2079. What pile was this that came up through the floor, did it not settle with the rest?—It must have been one that had been used in the staging for the construction.

2080. (*Major-General Simmons.*) In looking at the magazine arrangements, the Committee saw no provision for lighting the magazine—has any design been prepared for re-arranging the magazine accommodation?—I am aware of none. The fort seems to be so constructed, that in order to render it of use in the present day, very considerable alterations would have to be made.

2081. (*President.*) Have there been any proposals made to mount heavier guns?—No.

2082. (*Colonel Harness.*) Is there any probability that the cut from the breakwater will be filled in at a future time?—I know of no decision on the point, but I have understood that some naval authorities are in favour of its being filled up.

2083. If filled in, that fort would be useless, would it not?—It would be much less useful.

2084. (*Major-General Simmons.*) Have not the guns of that fort a very important bearing upon the water in front of the East Weir, and would they not assist the batteries on the East Weir?—Probably they would.

2085. (*President.*) Are the foundations of that fort sufficiently strong to carry heavier guns if it should be determined to place them there?—Yes, quite; but the masonry parapet would require to be re-modelled.

2086. (*Major-General Simmons.*) It is too thin at present?—Yes.

2087. (*Colonel Harness.*) Do you think that a good modern battery could be put there?—Yes.

Portland Breakwater Fort.

2088. (*President.*) Are the estimates for the two Breakwater Batteries lumped together, or are they separate?—The Breakwater Batteries and the Nothe Fort are combined together in the Schedule of August 1867.

2089. The Breakwater Batteries have only been lately taken over by your department?—That at the North Head quite recently.

2090. But the whole of the foundations have been constructed under the Admiralty engineer?—Yes; the War Department paying the extra cost, which was considered due to the necessity for making the work strong enough to carry the fort.

2091. No Engineer officer has had any supervision over the formation of those foundations?—None whatever.

2092. Can you explain to the Committee the failures which had taken place previously to these works being handed over to the War Department?—My account would be rather second-hand.

2093. Then will you state to the Committee the condition of the preparations for the fort at the time that it was given over to you?—At the time that it was given over to me it appeared to be stable, and I received at the same time the levels of the top of the fort—a ring of levels—which showed that the greatest variation in any part was about an inch.

2094. But there had been previously some rather serious failure, had there not?—I have understood that in 1865 a considerable settlement took place, amounting in a part of the circle to nearly 3 feet. That was at the worst point, and in consequence of it, some of the masonry which had been already set was taken out, and compensation courses were put in, and the masonry made up again.

2095. (*Colonel Harness.*) Was that settlement of 2 feet 10 inches the whole settlement, or the settlement in any one part?—It was the maximum of the settlement at any point.

2096. (*President.*) Did that occur principally at any one point?—No; it occurred for about one-third of the circle, from nothing down to 2 feet 10 inches, and then going up to nothing again.

2097. Was that on the sea face?—No; it was towards the land.

2098. (*Major-General Simmons.*) On a part of the circle of the fort which would form the prolongation of the breakwater if carried through the fort?—It was here (pointing to the plan), more towards the land.

2099. (*President.*) Is it at all likely there was any scour going on round the head of the breakwater to cause the foundations to yield?—It was considered at the time that the cause of the settlement was a soft place which existed in the clay at the bottom of the sea; that the surface of the bottom for a certain depth was hard, and that one point of this hard crust had been broken through, and that the stone had gone down into the softer part.

2100. (*Major-General Simmons.*) Is the bottom of the sea near the foundation nearly level?—Yes.

2101. At what depth is that below low-water mark?—About 9 fathoms.

2102. Have you the specification upon which the foundations were constructed?—I have recently received it, and now hand it in:—

PORTLAND BREAKWATER.

Engineer's Office, 12th December, 1861.

Specification of "Special Foundation Material" to be loaded in the Quarries at the Glacis, &c., and sent to the Breakwater for the North Head.

No material to be loaded into the wagons except the flint beds and clean rubble, clean quarry chippings, and grit, free from all admixture of earth or soil. The largest stones for this purpose must not exceed two tons, but when stones of this size are sent, there must not be more than one "craned" or heavy stone in

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each wagon; when stones of one ton to one-half ton each are sent, there must not be more than two "craned" or heavy stones in each wagon, the remainder of the load in each case to be made up with rubble, spawls, and chippings of all sizes, from stones of 2 cwt. each down to fine grit, mixed in such proportions as will make the mass compact and free from interstices.

Particular care must be taken that nothing but the flint beds, with a small proportion of hard sound blocks from the site of the glacis, be used for this purpose, and especially that no soil or soluble matter be put into any of the wagons.

The wagons containing this special foundation material must be sent to the weigh-bridge in separate trains, and marked with a distinguishing plate.

(Signed) JNO. COODE,
Engineer-in-Chief.

PORTLAND BREAKWATER.

Extract of Clause 61 *of Contract Specification.*

CONSTRUCTION OF BREAKWATER HEADS. FOUNDATION DEPOSITS.

"The stone deposits immediately around and under the masonry of the heads must be carefully tipped from the railways on the stage, and so regulated that they may be brought up solidly and uniformly to the required level, the surface must then be levelled off by means of divers so far as may be necessary to receive the bottom or foundation courses of the masonry."

2103. (*Colonel Harness.*) Since the larger settlement took place, there has been one of an inch: is that a general settlement or an unequal one?—It is an unequal one.

2104. Does an inch represent the greatest amount of settlement at the spot, or only an inequality?—It represents the greatest amount of settlement, at least we presume so; it may all have gone down a foot.

2105. Have you not got a fixed bench mark?—No; but we are getting one. We believed that we had one on a pile, but on going into it we are not certain that the pile itself has not shifted, so that we have to level out from the shore, a step which we are just about taking.

2106. In fact you do not know what the actual amount of settlement has been?—Not at the present moment; but we do know that there has been an unequal settlement to the extent of an inch.

2107. (*Major-General Simmons.*) It was stated to the Committee when on the spot that a part of the embankment immediately under the outer walls of the enclosed circular space had been laid with special precautions, and brought up in successive layers for some feet, but it does not appear from this specification that that precaution was taken. Do you know of any other specification in which that will appear?—No; I know of no other. As I have already stated what I understood to have happened in the way of settlement, perhaps I had better conclude that part of the story, and say that in March 1867, in a heavy gale of wind, a considerable portion of the upper part of the masonry was carried away on the outer side of the breakwater; it was in a heavy south-east gale.

2108. (*President.*) Did that arise in any way from any failure in the foundations?—No; it was simply from the force of the sea on the wall.

2109. (*Colonel Harness.*) The gale did not produce any settlement?—Not that I am aware of.

2110. (*Major-General Simmons.*) What was done to protect the foundations in consequence of that heavy settlement which you spoke of having taken place in 1865 on the north-west side?—I think it was at that time that additional stone was thrown down outside the entire ring of the foundations, as indicated on the plan.

2111. Have you any sections in your possession showing the form of the breakwater previous to 1865, and showing the form that the stone had taken under water?—I have none of so early a date.

2112. Have you any sections which show their state at the present time?—I have sections which show their state in May 1867, and in May 1868.

2113. Were they taken on the same lines?—Yes.

2114. Will you be good enough to furnish them to the Committee?—I will do so.

2115. (*Colonel Harness.*) Were the blocks of stone that were thrown in, after the settlement, of a very large size; were they specially selected on account of their large size?—I cannot say.

2116. (*Major-General Simmons.*) Who was the Admiralty Engineer who constructed this work?—Mr. Coode.

2117. Did he, in handing over the works to you, give you any written opinion as to what he considered the probability of the work being able to support a heavy structure like a gun tower?—No; I had no written opinion from him.

2118. (*President.*) Was any survey held upon it before it was taken over by your department?—No special survey was made by anyone beyond myself; I visited the work in company with Mr. Coode.

2119. (*Major-General Simmons.*) The foundations had been made from the first with a view to a heavy work coming upon them, had they not?—Yes, exactly.

2120. Did Mr. Coode express any opinion to you as to whether or not he should consider it safe to proceed now with a building of that character?—Yes; I have heard him express the opinion that such a work may be proceeded with with perfect safety.

2121. (*President.*) Will you explain to the Committee what is now being done; are you not preparing a bed of concrete for the foundations?—I have been in correspondence with the War Department during the whole of this year as to the plan to be adopted. The War Office have undertaken the preparation of a plan, and my instructions at the present time are to prepare a bed of concrete over the whole of the inner circle at a certain level.

2122. Of what thickness is that bed of concrete to be?—12 feet.

2123. (*Major-General Simmons.*) All over?—Yes.

2124. (*President.*) Will not the thickness be greater in the outer ring?—No; the thickest part is in the centre portion, inside the radial walls.

2125. Your directions are to make a bed of concrete, 12 feet thick, and for that purpose you are removing the ballast?—I am removing the old hearting, which is of small loose stone.

2126. (*Colonel Harness.*) Is the concrete to be ordinary lime concrete?—It is to be Portland cement concrete.

2127. (*Major-General Simmons.*) Have you any knowledge of the plans upon which the fort is to be constructed above that bed of concrete?—I received a plan from the War Office about three months ago, showing what they proposed, and asking for any observations that I had to make.

I made those observations, and returned the plan to the War Office, and I have understood that a revised plan has been got out.

2128. (*President.*) It has not yet been sent to you?—No.

2129. (*Major-General Simmons.*) In taking out this hearting, have you come upon the face of the work that was specially constructed to carry the outer walls?—No; we shall not come down on them, because, we do not go beyond that (pointing to a plan), that is concrete already; all that I am doing is at the inner circle, and the chief portion of the fort will be upon this inner circle (pointing to the plan).

2130. (*President.*) By this plan you would appear to go near to the level of low water spring tides?—Our present instructions are to be 1 foot above that level.

2131. Will it require any special provision to keep the water out in order to allow the concrete to set?—I think it will.

2132. (*Major-General Simmons.*) Have you made any calculation of the pressure per square foot, that will be brought upon that concrete by the superincumbent building?—I have not gone into that, not having the plans, but the principal weight will be the turrets.

2133. As the revised plans have not been sent to you, I presume you cannot form any estimate of the amount that will be required to finish this fort?—None at all.

2134. (*President.*) Have any sums of money been transferred to your account for the foundations of this fort, or has any sum been transferred to the War Department?—No; but money has been transferred *from* the War Department to the Admiralty for what they have done.

2135. Do you know what the amount which has been repaid is?—75,967*l.*

2136. That is in fact the cost of the foundations for the fort?—Yes.

2137. The whole of that came out of the loan except a small sum?—Yes.

2138. (*Major-General Simmons.*) In a similar way, have the foundations of the inner pier-head fort been charged against the Loan for Defences?—At page 4 of my Memorandum you will find that 8,387*l.* was charged against Vote 12, and 2,280*l.* against the Loan for Defences.

2139. Is that for the foundations of the whole work?—Yes.

2140. In the Parliamentary Estimate of 1862 a sum of 80,000*l.* is taken for the Nothe Fort, and 145,000*l.* for the Breakwater Batteries. Do you know whether that included the foundations of those batteries, or what was paid to the Admiralty for them?—I believe so.

2141. In the Act of 1867 the estimated cost of the Nothe Fort and Breakwater Batteries is taken together at 295,000*l.*; is the Nothe Fort still represented by 80,000*l.* in that estimate?—The Nothe Fort has hitherto been considered as representing 90,000*l.*; the object of combining the two together I do not know.

2142. The increase on the two forts in the two Parliamentary Estimates of 1862 and 1867 has been 70,000*l.*?—Yes.

Nothe Fort.

2143. (*President.*) What is the present state of Nothe Fort?—It may be said to be completed with the exception of the formation of the glacis and the upper battery, relative to which nothing has yet been decided.

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2144. The fittings for the guns are not yet provided in the gun portion of the works?—We have not yet provided the racers themselves, but everything requisite for fitting the racers on to is there.

2145. Some slight failure, I believe, occurred in the sea-wall; will you be good enough to explain to the Committee what it was?—In the autumn of 1867, at one portion of the sea-wall, some signs of weakness appeared near to the top; there was a slight movement of the stones. This was observed as soon as it commenced, and steps were taken at once to remedy it. Some loose backing from the back of the wall was taken out and proper backing was put in. It was a small matter, and the total cost of the repair was only 110*l.* Since that time no further sign of failure has appeared.

2146. That failure did not arise in any way from a failure of the foundations of the wall?—Not at all.

2147. Was that loose backing put in contrary to the specification, or was it intended to have had better backing?—It was intended to have had better backing.

2148. And the fault arose from the neglect of the contractor?—Yes.

2149. In this fort I believe the basement storey extends over a little more than about half?—Yes.

2150. And that half is under the portion of the battery which will be armed with the heaviest guns?—Yes, quite so.

2151. Is not the magazine accommodation for those guns provided in the basement floor in addition to the large main magazine?—There is some magazine accommodation there, but the main magazine is in the gorge.

2152. There are expense magazines under the casemates on the south front of the fort?—Yes.

2153. Is it intended to supply all the guns on the north and east fronts from those expense magazines?—There is no other provision made for supplying those guns, unless the small compartments in the casemates are used for expense magazines.

2154. Those small compartments are in the front piers, are they not?—They are at one side of those piers.

2155. Do you think there would be any difficulty in making provision for bringing the powder from the lower magazine, if a change of armament should take place, by a route separate from the lifts which supply the casemates intended for the heavier guns?—No; I think that that could be arranged.

2156. As I understand, it is intended to provide three classes of guns for the armament of that tier?—Yes; 18-ton guns, 12-ton guns, and 110-pounders.

2157. Then it would seem to be very necessary that some arrangement should be made to prevent any confusion taking place in supplying powder and shells to those guns?—Yes.

2158. At the present time no special arrangement has been made for supplying the 12-ton guns, or the 18-ton guns, or the 110-pounders?—None for making the supplies separately.

2159. (*Major-General Simmons.*) Are there not some vacant arched spaces under the 7-inch guns which might be converted into magazines for them?—There are some in their immediate vicinity which could be readily adapted for that purpose.

2160. The doors of those small spaces which

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you said might be supposed to be allotted for expense magazines would open very near to the fire-places in the casemates, would they not?—Yes.

2161. Therefore they are scarcely adapted for expense magazines?—They would answer very well for shells.

2162. What is the thickness of the wall outside those spaces, or what amount of protection would they have from exterior fire?—Six feet of masonry, and this again is covered by some feet of earth.

2163. (*President.*) You think that there would be no difficulty in revising the present arrangement, so as to provide greater facilities for supplying the 12-ton guns?—I think not.

2164. The upper battery you say has not yet been decided upon?—It is entirely undecided upon.

2165. What amount has been already expended on Nothe Fort?—Up to the 31st March last it was 85,999*l.*

2166. (*Colonel Elwyn.*) Without the upper battery?—Yes.

2167. Is that the estimate for the completion including the present liabilities?—No; the further amount required to complete it is 4,200*l.*

2168. (*Colonel Harness.*) Exclusive of iron shields?—Yes; and providing nothing for the upper battery.

2169. (*President.*) All you are now doing is done by military labour?—Yes, entirely.

2170. Is the saving by military labour very great?—That depends upon the nature of the work, and it also depends very greatly upon the superintendence. The saving upon this particular work has been 15,000*l.* on 64,000*l.*

2171. Then the 4,200*l.*, which will be required to complete the work would not be sufficient, except upon the assumption that you were to have military labour?—No.

2172. (*Colonel Harness.*) What description of work is it necessary to be to obtain a saving upon military labour?—I think, with good superintendence, you may obtain a saving on all classes of work; but the largest saving will appear where the fewest materials are required—in earthwork, for instance, the saving is very great.

2173. That is to say, when unskilled labour is required?—Yes.

2174. Upon Nothe Fort was a great deal of skilled labour employed?—Yes; of skilled military labour.

2175. Still a great saving was effected by employing military labour?—Yes; and I think the superintendence there has been very good indeed.

2176. You think the work shows that the superintendence has been very good?—Yes.

2177. (*Major-General Simmons.*) Have you measured up the amount of work that has been done by military labour, and worked out the value of it according to the schedule of prices that was before in existence?—Yes, we have done that quarter by quarter. It has been moneyed out, the prices being those of the contract under which the sea-wall round the fort was built. I think I may add that those prices are not unduly high, because the contractor threw up his contract as he found it did not pay.

2178. What has been the general result?—The result has been a saving of 15,000*l.* out of 64,000*l.*

2179. (*Colonel Harness.*) Upon those prices which the contractor thought were not remunerative?—Yes.

2180. (*Major-General Simmons.*) If military labour had not been employed there would have been a very considerable excess upon the original estimate, would there not?—Yes.

2181. The original estimate for Nothe Fort was 80,062*l.*, which was increased to 90,000*l.* in 1867: what has been the cause of the increase from 80,000*l.* to 90,000*l.*, was it in consequence of a change in the plan?—I have no explanation to give upon that point. These schedules have never been compiled at the station.

2182. (*Colonel Harness.*) If the sums spent under the contract had been expended, and the work executed by military labour, you would have done it within the estimate?—Yes.

2183. (*President.*) The sum of 48,000*l.* appears to have been paid to the contractor?—Quite so.

2184. Was there any dispute as to the value of the work that was done, or any question before a settlement took place with the contractor after he had thrown up the contract?—There was lengthened discussion as to the item of 18,262*l.*, which involves a compensation payment for the plant.

2185. Did the failure of the contract, and the necessity which existed on the part of the War Office to take over the plant and carry on the work themselves, involve an increased expenditure, which would add to the original estimate?—Probably it did so to some extent.

2186. Therefore that would cause, to a certain extent, a deduction from the saving made by the employment of military labour?—Yes.

2187. (*Major-General Simmons.*) Has anything been included in your comparative estimate for plant?—Yes.

2188. On the side of military labour?—Yes; we have taken that fully into account, and we have taken the wear and tear of plant at its full value.

2189. Is any alteration contemplated to cover the door of the magazine on the upper level?—Yes; an alteration has been proposed, and that matter is under consideration at the War Office.

2190. Does your estimate for the completion of the work include the bridge?—Yes.

2191. And the drawbridge?—Yes.

2192. Is that drawbridge yet ordered?—Yes.

2193. Of what pattern is it to be?—Of the pattern of that which is now called Guthrie's drawbridge.

2194. Are any of them in existence elsewhere?—Yes, I believe so.

2195. Do you happen to know where?—I believe there is one at Sheerness, and several at Portsmouth.

2196. How is the roadway intended to be completed into Nothe Fort?—As I show it on a plan already furnished to the Committee.

2197. A long straight cut?—Yes.

2198. Will not that expose the gateway?—It will do so to some extent; but looking at the fort from various points in the surrounding country, that perhaps is the best road of approach that can be devised.

2199. As the fort is so small, and I presume the drawbridge will not be sufficiently strong to carry heavy guns, is there any great necessity for making a carriage road into it? If taken up an incline and down an incline, the gateway would be in a great measure covered, would it not?—No; it would never be covered from Weymouth. The best direction for that road underwent an immense deal of discussion, and that mode of

approach (pointing to the plan) was after all considered to be the best. It was, in fact, a choice of difficulties and inconveniences.

2200. Is this (pointing to the plan) intended to be completed with a parapet to the front?—That is the present intention.

2201. And an advanced covered way?—Yes; an advanced parapet. *Lieut.-Col. E. Belfield, R.E.*

2202. (*President.*) You say that some of the details of the approach are still subject to modification?—Yes. 27 Aug. 1868.

The witness withdrew.

(*Adjourned sine die.*)

Monday, 5th October, 1868.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Captain CHARLES ELWIN HARVEY, R.E., examined.

2203. (*President.*) You were Commanding Royal Engineer at Dover at the date of the Committee's inspection?—I was acting Commanding Engineer. *Capt. C. E. Harvey, R.E.* 5 Oct. 1868.

DROP REDOUBT.

2204. What was the nature of the new work that was undertaken under the Loan for Defences in the Drop Redoubt in those lines (pointing to a sketch)?—The construction of the caponnières on the flanks of this communication ditch (pointing to the sketch), a magazine was also added near the Drop Battery.

2205. The Drop Battery already existed?—Yes.

2206. Were there any failures in the course of the work?—None.

2207. There appears to be some question as to the security of one of the magazines from direct fire?—Yes; the principal magazine in the Drop Redoubt is too exposed.

2208. In what way do you consider that the main magazine is not sufficiently secure?—It is questionable whether it would be bomb-proof. It is not kept sufficiently low down under cover of the parapets; that door (pointing to the sketch) is not covered.

2209. That magazine is below the level of this parapet (pointing to the sketch), is it not?—The top of that roof is higher than the parapet.

2210. Could a shot passing over the parapet strike the magazine on a vulnerable point?—Yes, it could be dropped on, but it would be from a long range.

2211. Do you remember what the total thickness over the magazine is?—This (pointing to the sketch) is an old construction; it is no new work; I believe it is about 6 feet of brick arch with concrete, and slated.

2212. (*Major-General Simmons.*) Has anything been added to it, under the Loan for Defences?—Nothing.

2213. (*President.*) What height is the Drop Redoubt above the sea?—It is 267 feet above the sea; that is the terreplein.

2214. Has anything been done towards remodelling the Drop Battery, with the view of mounting heavier guns to be fired against ships?—No, except the construction of the magazine.

2215. Is that magazine protected from direct fire from ships?—Yes. The entrances to the expense magazines require more protection. In connection with this communication ditch there was a magazine constructed under the rampart there (pointing to the sketch).

2216. Is the door of that magazine exposed?—No; not the door of that magazine, but of the expense magazines behind there (pointing to the sketch), that serve this battery. That (pointing to the sketch) is a large store magazine, but these two are expense magazines. The entrance doors are rather exposed to a direct fire from the sea.

2217. Has any money been asked for, under the Annual Estimates, for the improvement of that battery?—Yes; to add more cover to the entrance doors.

2218. (*Major-General Simmons.*) What is the thickness of the parapets on the left front of the Drop Redoubt?—About 20 feet.

2219. (*President.*) In this Report it is stated that the total cost of this work for the Drop Redoubt, with the Drop Battery, has been 35,577*l.*, of which only 13,276*l.* was charged to the Loan for Defences?—Yes.

2220. 22,000*l.* must have been spent out of the Annual Estimates?—Yes, previously; and the probability is that some part of the magazine was built on those estimates.

2221. (*Major-General Simmons.*) Of the seventeen guns which are stated here as being mounted on the terreplein, how many bear on the land side, and how many on the sea defences in the Drop Redoubt?—There are six that bear on the sea, two that will bear on the land and sea, and the remaining nine will bear on the land entirely.

2222. (*President.*) Those seventeen guns are independently of the guns in the Drop Battery?—Yes.

2223. (*Major-General Simmons.*) Is the magazine accommodation of each fort at Dover, including the Drop Redoubt, sufficient to contain all the ammunition for that fort, or is there any large reserve of magazines, in addition to the central magazine, from which to replenish the forts if necessary?—Certainly; there is a large store magazine of powder in the Castle, which is supposed to replenish the magazines in the outer works.

2224. (*Colonel Elwyn.*) There is a large store

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magazine in the Citadel, is there not?—Yes, and in the Castle too.

2225. (*Major-General Simmons.*) Are there any expense magazines for the guns on the terreplein in the Drop Redoubt?—Not at present.

2226. Are they estimated for?—Yes; one is estimated for in connection with the laying of the racers for the new armament.

2227. Is that for the sea guns, or on the land front?—On the land front.

2228. (*President.*) Are those estimates prepared with reference to the Annual Estimates or the Loan for Defences?—With reference to the Annual Estimates.

2229. (*Colonel Harness.*) Will there be only one expense magazine for the seventeen guns on the terreplein?—There is at present only one.

2230. There is only one at present provided for?—Yes.

2231. (*Major-General Dickson.*) Are there no recesses provided?—Yes; there are several shell recesses. There are shell recesses between every two guns under the banquette; that is on the land side, not on the sea face.

2232. (*Colonel Elwyn.*) Has that armament been approved of?—Eleven 7-inch breech-loaders are all that have been approved of; the other six are to be heavier for the sea face.

2233. And they have not been approved of yet?—No.

2234. (*Major-General Dickson.*) There is no accommodation provided yet for artillery stores?—There is only one artillery store on the terreplein of the Drop Redoubt; but there is very good store accommodation for artillery stores in the caponnières.

Western Heights.

2235. (*President.*) What did the new works on the north front of the Western Heights consist of?—Of the North Centre Bastion, and the construction of these North Lines (pointing to the same), and the North Entrance.

2236. Was that all done out of the Loan for Defences?—Not the whole of it.

2237. It is stated in the Report that the total cost of these works was 52,251*l.*, of which 38,017*l.* was charged to the Loan for Defences?—Yes.

2238. Have there been any failures?—The escarp wall of the right face of the outer detached bastion gave way.

2239. Was any alteration made in reconstructing it and repairing it, or was it repaired in the same form as that in which it was originally made?—The wall was not taken down; it was tied back by iron tie-rods, and a wall was placed in front.

2240. Do you remember when that repair was made?—In 1866–67.

2241. Has there been any failure since?—No.

2242. Is the cost of that repair, which is stated at 1,366*l.*, included in the 38,000*l.* which is charged under the Loan for Defences?—Yes.

2243. There are no further liabilities?—No.

2244. (*Major-General Simmons.*) When you stated that the wall gave way, you did not mean that it absolutely fell?—No; it showed signs of weakness.

2245. (*Colonel Harness.*) And you made it thicker on the outside?—Yes.

2246. (*President.*) This work is entirely for land defences, is it not?—Yes.

2247. Is the armament undergoing any remodelling?—The armament has not yet been fixed upon.

2248. Has any estimate been made of the sum required to complete the racers and platforms, and to finish the work for the reception of this armament?—A sum has been inserted in the Annual Estimates for the racers for the armament.

2249. No further estimate has been made to be defrayed out of the Loan for Defences?—No.

2250. What magazine accommodation is there in this outer fort?—The magazine accommodation consists of an expense magazine in the outer bastion on the terreplein, and one in the caponnière.

2251. How many rounds of ammunition will it contain for each gun?—It will contain 45 barrels.

2252. I believe the work is intended to mount 15 guns on the terreplein?—Yes; but that is for the inner and outer bastions.

2253. How many guns will be served by the expense magazine?—Five probably of the present heavy guns; though the work was constructed for 10 guns.

2254. How many guns are there in the Inner North Centre Bastion?—Five; there is an expense magazine behind that gun-room (pointing to the sketch), and in that caponnière also (pointing to the same); there is no store magazine in that part of the work (pointing to the sketch).

2255. (*Major-General Simmons.*) Does the number of 15 guns which are stated to be on the terreplein include the guns in the Lower Bastion, the Upper Bastion, the North Curtain, and the North-East Lines as well?—No; not the whole of them.

2256. What number of guns are provided between the North Centre Bastion and the Drop Redoubt on the terreplein?—Seven.

2257. Is there an expense magazine apart for those seven guns?—Yes.

2258. What quantity of ammunition will it contain?—144 barrels.

2259. (*President.*) Are the embrasures cut for the guns in this part of the work (pointing to the sketch)?—No.

2260. Is the armament yet decided upon?—No.

2261. What accommodation for artillery stores is provided?—There is one artillery store in the detached or outer bastion, and an artillery store in the inner bastion.

Western Outwork.

2262. With regard to the Western Outwork, when was that begun?—In October 1861.

2263. When was it completed?—In 1864.

2264. The total cost of it is stated to have been 86,143*l.*, of which 62,419*l.* was chargeable to the "Loan," is that correct?—Yes.

2265. Are there any further liabilities?—None.

2266. What failures, if any, have occurred?—Only in the counterscarp revetment wall of the South Cut.

2267. Of what material was that wall built in the first instance?—Of rubble chalk, with brick and flint facing in lime mortar.

2268. Did it give way altogether?—The upper part gave way altogether.

2269. Was it entirely rebuilt?—Yes; that portion of it was entirely rebuilt.

2270. With the same materials?—No; it was built of concrete in Portland cement.

2271. Was that about the same time that the failure took place at the outer fort?—Exactly.

2272. When was it repaired?—In 1867.

2273. Has it shown any signs of weakness since that time?—None whatever.

2274. What number of guns does that work mount exclusive of the caponnières?—Twenty-seven.

2275. Is the nature of the armament yet decided upon?—No.

2276. Are embrasures cut for the guns?—No.

2277. What magazine accommodation is provided?—There is one store magazine.

2278. For the 27 guns?—Yes.

2279. (*Major-General Dickson.*) Are there no expense magazines?—No.

2280. (*President.*) What shell stores are there?—None; there is one artillery store.

2281. (*Major-General Dickson.*) Are there no shell recesses?—No; the racers are not fixed.

2282. (*President.*) None of the arrangements for the armament are yet completed?—No.

2283. Is it proposed to complete the fort out the "Loan," or will it be completed by money obtained under the Annual Estimates?—I anticipate from the Annual Estimates.

2284. Has any estimate been made of the sum that will be required to complete the fort?—Yes; a rough approximate estimate for laying the racers.

2285. (*Major-General Dickson.*) And for providing expense magazines?—No.

2286. (*Major-General Simmons.*) What are the contents of the magazine?—234 barrels.

2287. (*Major-General Dickson.*) How many guns are there in the caponnières besides the 27 which are mounted on the terreplein?—There are 10.

2288. (*Major-General Simmons.*) Are there not small expense magazines in the caponnières for those guns?—Yes; there are two magazines in the caponnières.

2289. (*President.*) The caponnières do not depend upon that magazine which is on the terreplein?—No; there are 234 barrels in the main magazine, and 82 in those in the caponnières.

2290 (*Major-General Dickson.*) No provision has yet been made for any expense magazines on the terreplein?—No.

2291. (*President.*) Do any of the guns in the Western Outwork bear upon the sea?—Only *towards* the sea.

2292. Would any of them be brought to bear upon ships attacking the place?—No; I should say not.

2293. They would not take part in the defence against ships?—No.

Citadel.

2294. Has there been any money expended on the Citadel out of the Loan for Defences?—Yes; in a variety of services, such as building officers' quarters, and deepening some of the ditches, and constructing a guard-room at the entrance.

2295. There appears to have been a sum of 34 560*l.* expended upon the Citadel, what part of that sum was taken from the Annual Estimates?—All that amount came from the "Loan."

2296 (*Major-General Simmons.*) Are there any expense magazines in the Citadel?—Yes.

2297. How many are there in the Citadel on the terreplein?—There are six expense magazines.

2298. What do they contain?—They contain about 108 barrels each.

2299. For the supply of the guns in the Citadel?—Yes; but they were not put up under the "Loan."

2300. Is the expense magazine accommodation in the Citadel sufficient?—I should say so, except on the north-east face, another artillery store and expense magazine are wanted there.

2301. What are the contents of the main magazine in the Citadel?—It will contain 1,620 barrels.

2302. Was that magazine constructed under the "Loan"?—No.

2303. I presume it is intended as a reserve for all the magazines on the Western Heights, from the Drop Redoubt to the western outwork?—I should say partly so; but for the citadel chiefly.

2304. (*President.*) What artillery store accommodation is there in the Citadel?—There is a want of artillery store-room; there is only one on the terreplein.

South Front.

2305. What amount of money has been expended on "The South Front Barracks and South Entrance and Lines"?—54,520*l.*

2306. Was that all out of the "Loan"?—No; the sum of 6,095*l.* was paid out of Vote 12 of the Annual Estimates.

2307. Have there been any failures in this work?—None of any importance.

2308. What number of guns is it intended to mount?—On the terreplein of the whole of these lines it is proposed to mount eighteen guns.

2309. Are any of them intended to be in casemates?—No; but there are twelve besides in casemates.

2310. Do these guns in the casemates bear upon the sea?—No.

2311. Is there not provision made for a heavy pivot gun at that corner (pointing to the sketch)?—Yes.

2312. What magazine accommodation is provided in this work?—There is an expense magazine in the caponnières of the South Front Barracks, and there is an expense magazine for the South Lines' guns here (pointing to the sketch). There is no expense magazine on the terreplein.

2313. How are those guns on the terreplein supplied with powder?—The guns are not placed there yet.

2314. Neither the armament nor the magazine accommodation for the terreplein is yet decided upon?—No; the artillery stores, the magazine accommodation, and the racers, it is presumed will all be placed after the armament has been fixed upon.

2315. (*Major-General Simmons.*) Are those eighteen guns on the terreplein all intended to fire towards the sea?—No; not the whole of them.

2316. How many of them are intended as sea-defence guns?—There are seven that would aid in the defence of the place against ships.

2317. The other eleven guns being flanking guns, or for land defence?—Yes.

Castle Heights.

2318. (*President.*) Has any money been expended upon the Castle out of the "Loan"?—Yes; for casemated barracks.

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2319. Was that all that was done out of the "Loan"?—Yes.

2320. Has there been any failure there?—None.

2321. The total cost appears to have been 6,583*l.*?—Yes.

2322. All that was charged to the "Loan"?—Yes.

Castle-Hill Fort.

2323. Was this fort constructed entirely out of the "Loan"?—Yes.

2324. Has Castle-Hill Fort been built under a contract?—The casemated barracks in the fort were first built under contract.

2325. Is there any contract now?—No.

2326. Do you remember what the amount of the contract for the barracks was?—29,580*l.*

2327. What is the total sum that has been expended up to the present time on that fort?—76,730*l.*, up to the end of March.

2328. Is that all under the "Loan"?—Yes.

2329. (*Colonel Harness.*) Was the original contract for the whole work, or only for part of it?—Only for the casemated barracks to contain the necessary accommodation for one Field Officer, six Officers, 217 Men, and two Horses.

2330. Was that contract completed?—Yes; it was finished.

2331. (*President.*) Has the contractor been entirely settled with?—Yes.

2332. Is the armament for the fort decided upon yet?—No.

2333. For how many guns is it constructed?—For thirty-five guns on the terreplein; twenty-four of lesser size in the caponnières and gun-rooms, besides nine in the East and West Wing Batteries.

2334. (*Major-General Simmons.*) How many of those guns are in the East Wing, and how many in the West Wing?—There are five in the East Wing, and four in the West Wing.

2335. (*President.*) What has been done with regard to the East and West Wing Batteries? What state are they in now, or how far are they completed?—They are very nearly completed.

2336. It is stated in the paper before me that "The present liabilities amount to 1,600*l.* more, and it will require a further sum of 8,970*l.* to complete the works"?—Yes.

2337. Will that additional sum be sufficient to complete them; to provide racers, and everything necessary to receive the armament when decided upon?—No.

2338. There will be still a further sum required?—Yes; for the racers.

2339. Will it include the expense magazines?—Yes.

2340. Are the plans for these all complete?—Yes.

2341. What magazine accommodation is there for the guns on the terreplein; the thirty-five guns in the main work?—The expense magazines are the three expense magazines in the haxos and one in the right shoulder.

2342. How many of those in haxos are there?—There are three, containing 180 barrels in each.

2343. Is there a main magazine in the fort?—There are two large magazines.

2344. Do you remember how much they contain?—Each of them contains 1,296 barrels.

2345. Then additional expense magazines will be required beyond those in the haxos?—They are not contemplated at present; there is no estimate for them.

2346. Is it contemplated to have only three expense magazines for the 35 guns?—Four are all at present constructed.

2347. There are separate magazines for the caponnières, are there not?—Yes; there are four magazines altogether, as expense magazines on the terreplein; and eight in the caponnières and gun-rooms.

2348. (*Major-General Simmons.*) Are these magazines about equally distributed on the land front?—Quite so.

2349. Are there separate expense magazines for the wing batteries?—Yes; they are provided.

2350. Is there one for each battery?—Yes.

2351. What are the contents of those magazines?—286 barrels in one battery, and 254 in the other.

2352. (*Colonel Harness.*) The 286 barrels are in two bays?—Yes.

2353. (*President.*) Who has the superintendence of the military labour?—Captain Maquay, R.E.

East Wing Battery.

2354. (*Major-General Simmons.*) Are the details for furnishing the East Wing Battery entirely decided upon?—Yes; it is to mount five guns, and to have magazine accommodation for 286 barrels.

2355. Has it been decided how the work is going to be completed towards the Castle front?—The details of this have been recently decided on.

2356. How will it be finished?—The counterscarp will be cut away so that the ditch will be seen into from the Castle rampart.

2357. Then a caponnière will not be built?—There is to be no caponnière.

2358. (*President.*) Have there been any failures in this work?—There have been small failures in the breaking down of pot-holes.

2359. But nothing of any serious consequence?—No; some of the walls and the foundations were built of rubble chalk, in the hope it would answer and effect a large saving in the cost of the work.

2360. You are using concrete now, are you not, in building up the pot-holes?—Yes.

2361. Has any of that been exposed to the weather for any length of time?—None of it for much more than a year.

2362. Then you cannot yet say how far it will stand the effects of weather?—No; it has given us satisfaction up to the present time.

2363. (*Major-General Simmons.*) Is the Guston Road to be diverted from its present course?—It has already been diverted.

2364. Is it to be diverted from its present position?—No.

West Wing Battery.

2365. Shall you build a bridge across the ditch that runs down from the main work to the Western Wing Battery?—Yes.

2366. Is it included in the estimate?—There will be funds enough in the general estimate to cover the expense of it.

2367. Is it to be a drawbridge or standing bridge?—The kind of bridge is not yet decided. It may be a standing arched bridge.

2368. Are the details of the bridge for crossing that ditch yet settled?—No.

2369. The remedies which had been applied

for securing the escarp for the West Wing Battery appeared when the Committee were there successful; have there been any failures since?—No.

2370. I suppose they are nearly all completed by this time?—Yes; that face is finished.

2371. (*President.*) It appears from the printed statement before me that the total sum expended out of the Loan up to the present time, and the liabilities, amount to 281,610*l.*?—Yes.

2372. And that 8,970*l.* more will be required to put the work in the condition contemplated at the time the Estimates were framed?—Yes. *Capt. C. E. Harvey, R.E.* 5 Oct. 1868.

2373. Also that a further sum will be required for completing the forts to receive their armaments?—Certainly.

2374. And that further sum will depend upon the nature of the armaments, and the arrangements which may be decided upon hereafter?—Yes, as to the ordnance, the magazines, the artillery stores, and the laying of the racers, &c.

The witness withdrew.

(*Adjourned sine die.*)

Friday, 5th February, 1869.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A. | Colonel H. D. HARNESS, C.B., R.E.
Major-General J. L. A. SIMMONS, C.B., R.E. | Colonel T. ELWYN, R.A.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Lieutenant-Colonel EDWARD BELFIELD, R.E., and JOHN COODE, Esq., C.E., examined.

2375. (*President, to Mr. Coode.*) You are the engineer who superintended the construction of Portland Breakwater?—I am. *Lieut.-Col. E. Belfield, R.E., and J. Coode, Esq., C.E.* 5 Feb. 1869.

2376. Were the foundations for the fort there laid-in under your direction?—They were. From my specification, and under my direction and, I may say, almost daily supervision.

2377. Will you shortly describe the mode in which those foundations were laid-in?—A timber stage was erected over the site of the fort, generally of a similar character to that employed on the breakwater. From this stage wagons containing a particular kind of material were discharged in such a manner as to bring up from the bottom a base of rubble-stone, in pretty uniform layers—the object being to ensure, as nearly as possible, a uniformity of subsidence. That there would be some subsidence in such a case, there could be no doubt or question; and it was provided for accordingly. I may say that a precisely similar course of proceeding had been adopted in the case of the two circular heads at the passage between the inner and outer breakwaters. Although the general system was precisely the same, there was this difference in the case of the outer head, that we worked from a circular staging, and the wagons were tipped more directly over the foundation of the wall than in the case of the two inner heads. In the case of the inner heads there was a square stage worked by turn-tables; we considered that this circular staging was the more perfect plan of the two.

2378. The deposit was more equal?—It was. The period occupied in bringing up the stone from the bottom, which is at an average height of about 40 feet—that is to say, from the bottom to the under side of the masonry—was rather more than twelve months. It was brought up in layers. The first layer, allowing for a little inequality in the bottom, was about 8 feet; the second was 10 feet, the third 5 feet, the fourth 5 feet, the fifth 5 feet, the sixth 3 feet, and the seventh 3 feet.

2379. That is 39 feet?—Yes. Then there was the foundation material. We there resorted to a particular class of material.

2380. What material did you use below?—The material forming the mass of the deposit consisted of the harder beds from the Portland quarries—the largest stone in any case being 2 tons, and the gross load of the wagon was from 7 to 8 tons. Where a stone was 2 tons, the remainder of the load was formed of what we call hand-rubble,—of a size that a man could handle readily,—and quarry chippings and silicious grit, of which we find a great deal in some parts of the quarry, which were reserved for this particular purpose, the object and intention of this admixture being to form the most solid and compact mass which was possible. The experience which we had gained in the two heads of the passage had satisfied us that this was the best course of proceeding under the circumstances. The water varied from about 53 feet to 59 feet deep at low-water spring tides, and the bottom was tolerably uniform in character, as we believed. Borings were made before commencement—one on each quarter, north, south, east, and west; and I need not tell the Committee that it is no easy matter, in an open and exposed situation like that, with from 50 to 60 feet of water at low-water spring tides, to bore and to raise the material with the boring tool. After a great deal of trouble, we succeeded in getting down about from eight to twelve feet into the bottom, finding the material to improve in character as we went down. The top surface was the dark blue clay—the Kimmeridge clay of the locality; and as we got down it became exceedingly tough and hard, and at last we reached the marl. We could not make progress in this marl, and believed then that we had as good a foundation as we could possibly get. The rubble was brought up to the level of the under side of the masonry about the end of the year 1862.

2381. Was this centre filled-in at the same time?—Yes, it was so brought up. The layer was brought uniformly across from side to side.

2382. Was there any difference in the mode of depositing the stone in the ring under the masonry from what was adopted in the centre?—There was a little more care in the selection of the material. The intention at that time being to erect the work only on the outer ring, more attention

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was paid to the selection of the material under the masonry than in the central portion; and in order to ensure the mass being as solid as was possible, frequent examination was made by divers, the object of which was to ensure that no two or three of these large stones should get together ridge-fashion, and that if they were found to have fallen in that position, they should be turned over, so as to be completely surrounded by small material. That was the only thing which we apprehended in the way of danger, and these examinations were made within the area which is indicated by these lines. The intention then was, that the masonry should be limited to this circular ring.

2383. In what year did you bring it up?—In the year 1862.

2384. You brought it up to the level of 39 feet from the bottom?—Yes.

2385. (*Major-General Simmons.*) Were not you aware that the centre of the space was intended to be covered by buildings?—Not with buildings.

2386. With regard to the timber staging which you have described, whereabouts did it rise with reference to the external wall?—Just over the external wall.

2387. With one line of rails?—Yes. But although there was one line of railway, it was not a railway in the ordinary sense; there was a large radial traveller with a span of 60 feet, and the wagons were put upon this traveller so as to distribute the stone uniformly over that area.

2388. So that you had a power of tipping over 60 feet?—Yes, the power of tipping uniformly; we had the power of tipping over the whole area of the head, but we had a special control and power over the regulation of the deposits within this 60 feet. The setting of the masonry was commenced on the 16th of December, 1862. I should say that a small portion of the deposit was put down in January 1863, but it was virtually completed at the end of 1862, and the masonry was then commenced. The three courses of Yorkshire landings which are shown here were completed in July 1863. The masonry was brought to low water in February 1864, and to the level of 19 feet 6 inches above low water, at which point the Admiralty left it, at the end of 1865. I said at the outset that some amount of subsidence was looked for; it was, of course, the same in the case of the two heads of the passage; there we calculated that the heads would go down somewhere about a couple of feet, and the subsidence in each of those cases was rather over that amount; in one case it was 2 feet 3 inches, and in the other I think about 2 feet 1 inch. That subsidence, as one might naturally expect, goes on over a considerable time, it being dependent first of all upon the gradual addition of the superincumbent masonry, and next upon the shock to which all structures so situated are more or less subject during heavy gales of wind. You can readily understand that the vibration from a shock by a heavy wave striking this structure causes a certain amount of pounding. With regard to the inner head, it was about four years from the time of the completion of the masonry before it came to a stop. It stood what is well known as the "Royal Charter" gale without any subsidence. Up to six months before that we had a gradual depression of the work, due to the consolidation of the artificial base and the compression into the original bottom of the bay.

2389. (*President.*) What means have you had of ascertaining the subsidence in this case?—By bench marks in the staging, and the level of the tide; but we relied more upon the bench marks. We had the level of the tide connected with a tide gauge on the shore.

2390. (*Major-General Simmons.*) At what level was the top of that mass of rubble all this time, whilst this wall was being built?—It was stopped at 17 feet below low water,—that is to say, when the works were originally set, and it has gone down about 3 feet; it was 17 feet, and the amount of subsidence subsequently was 3 feet 3 inches; it is now 20 feet 3 inches below low water. It was set at 17 feet on the supposition that it would go down about 3 feet, and it has actually gone down about 3 feet 3 inches.

2391. (*President.*) You look upon the subsidence as principally due to the compression of the material, and the consolidation of the bottom?—Yes.

2392. (*Major-General Simmons.*) At what time was the material brought up to a higher level as you have indicated?—We have added material from time to time, and there has been one special addition on the inside of the bay, where there was a settlement.

2393. (*President.*) That was in 1865, was it not?—It was in October 1864. That portion, I may say, is now as sound as any part.

2394. With reference to the mode of ascertaining the levels, have you any reason to doubt the accuracy of the bench marks which you used?—One bench mark was found to have subsided. A check was established. Variations of that sort have been allowed for, and the amount of subsidence has been as follows:—The first test period was 10 months, from December 1862 to September 1863; the drop of the mass was then $7\frac{1}{4}$ inches; from October to December 1863 there were 6 inches; from January to March 1864 there were $3\frac{1}{2}$ inches; from April to June 1864 there were 4 inches; from July to September there were 3 inches; from October to December 1864 there were 5 inches; from January to March 1865 there were 2 inches; from April to June 1865 there was a quarter of an inch; from July to December, which was a period of 6 months (the other period being 3 months), there was half an inch; and from January 1866 to January 1868 there were 2 inches; that is at the rate of a quarter of an inch in three months.

2395. (*Colonel Harness.*) Those figures will be subject to correction if there is any change in the bench mark, will they not?—They have been corrected. It makes a total of 3 feet 3 inches, and that allows for a drop of the bench mark of $5\frac{1}{2}$ inches.

2396. (*President.*) Do those figures include the heavy settlement which is stated to have taken place in 1864?—No; this is the general subsidence of the mass.

2397. (*Major-General Simmons.*) When did you discover the $5\frac{1}{2}$ inches which you have spoken of as having been lost in the bench mark?—Six or eight months since I think.

2398. (*President.*) Does this 3 feet 3 inches include the additional amount which has lately been discovered? I understand that there has been a discovery of late that the bench mark has sunk; is that included?—No; that is since the work was handed over to the War Department.

2399. The 3 feet 3 inches does not include that?—No.

2400. (*Colonel Harness.*) You seem to be under the impression that you have made a correction

for an error in the bench-mark discovered six months ago?—No; there is a correction made here for a subsidence of the bench-mark, which I thought had been the same, but this is an early one of some years ago.

2401. Therefore those figures are not corrected for the other subsidence?—Not for the last subsidence.

2402. Can you at all mention the period within which that alteration of the bench-mark has taken place?—It must have taken place since January 1868, because there were three bench marks previous to that time. There were three bench-marks on the stage for the purpose of ascertaining whether the relative difference was constant.

2403. But all the bench marks on the stage were liable to alteration?—Yes; and they were checked from time to time.

2404. Had you them checked by others on the shore?—No; not by others on the shore, but they were checked by each other. I should say that we have a very accurate tide gauge on the shore—a self-registering tide gauge; and the masonry being set during the whole of that time, that would be a check in itself.

2405. Did you find that the mean tide was very steady?—Yes; we can tell to a quarter of an inch what the tide level is; it is recorded every day and night by a self-registering tide-gauge.

2406. And the mean level is nearly constant?—The mean level is constant.

2407. (*Major-General Simmons.*) Were these bench-marks on the piles originally set out with reference to any bench-mark on the shore?—Yes; they were very carefully levelled with reference to a bench mark on the shore.

2408. And the bench-mark on the shore is still existing?—Yes; it is permanent.

2409. Therefore a reference from that bench-mark to the pile-head, in this last summer, would probably have given a correct explanation of the subsidence of that pile-head?—Yes; that bench-mark is fixed on a building founded on rock, and therefore there can be no question about it.

2410. (*President, to Lieut.-Colonel Belfield.*) Is that bench mark the same as that which is now used?—Yes.

2411. (*Major-General Simmons, to Mr. Coode.*) If that pile-head has gone down since January 1868, and if it has been found that a subsidence has taken place since that time, the whole amount which that pile-head has descended must be added?—Yes; Colonel Belfield can speak better as to that.

2412. (*President.*) I understand clearly that this is independent of anything which has since been ascertained?—Yes.

2413. Were the bench-marks on the piles checked with the bench-mark on the shore, continuously up to the time when the work was handed over to the War Office?—They were not checked continuously with the bench-mark on the shore, but with each other.

2414. When was the last check with the bench-mark on the shore?—The last check with the bench-mark on the shore, previously to handing over the work to the War Department, was in 1864.

2415. Then there may have been a considerable subsidence of those bench-marks without its being discovered?—But there could be no material subsidence of the work, because we always had the masonry and the work checked. If there had been a considerable subsidence at the bottom, the work would not have carried us up, that is to say if there had been a subsidence of 3 feet, we should have lost a 3-feet course, which we did not, we lost nothing appreciable.

2416. During the progress of the work, were you governed principally by the tidal measure from low water, or by the bench-marks on the piles?—By the bench-marks on the piles, up to the time when the height of the courses was determined.

2417. When was that?—In 1864.

2418. Then from 1864 those bench-marks on the piles were not checked with the shore?—No; we did not depend upon any check from the shore after 1864. The object of any levels taken after that time was with a view to ascertain the relative levels of the circle at different points.

2419. (*Major-General Simmons.*) Does the course which you laid as the top course, as bringing up the material to 19 feet above low-water mark, carry now 19 feet or thereabouts, or how much short of it does it carry?—There may be a question of a few inches. It is practically 19 feet 6 inches above low water, unless any subsidence has taken place since we gave possession to the War Department, which Colonel Belfield can speak to. I should not like to speak to the present level, because we do not profess to have taken it since January 1868.

2420. (*President.*) It has been stated that there was an unequal settlement in 1865; will you state what that was?—It was in October 1864; it was on the western side.

2421. The western side would be the harbour side?—Yes; a settlement took place on the harbour side. The greatest depression was at No. 7; it commenced between radial walls 2 and 3, and terminated between 13 and 14.

2422. That is as nearly as possible half the circumference?—Yes; the greatest depression was at No. 7, and it amounted, vertically, to 2 feet 3 inches.

2423. (*Major-General Simmons.*) At what height was the masonry at that time?—It was within three courses of the top. A few of the stones were set in the course below what is now the top course. It was completed to about 13 feet above low water.

2424. (*President.*) To what do you attribute that settlement?—To the yielding of the marl which we reached with the borings. That the evil was below that depth, I think there can be no question, because the stage piles went down with the masonry.

2425. How deep were those stage piles driven?—They were driven about 7 or 8 feet into the bottom.

2426. Did they reach the marl?—Yes; and we could not get them any further. This marl apparently formed a sort of crust over some softer material below.

2427. Was there any heavy gale of wind?—There was a very heavy gale. I should say, however, that there had previously been an appearance of settlement, if I recollect rightly, about a fortnight before this heavy gale came on; but the great amount of subsidence took place on a gale in October 1864.

2428. Do you imagine that those gales affect the mass of the material deposited for the foundations? Does the action of the wave go low enough to affect that?—I think that it is a matter of the alteration of the weight due to the fact of the masonry being immersed at one moment and the

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wave falling away at another, and it would thus act like a hammer of more than a thousand tons. If you take the difference of weight of the mass of masonry, the water surrounding it at one moment and having retired at another, there must be that difference brought to bear upon the foundation within a few seconds of time.

2429. (*Colonel Harness.*) It is not quite percussion, but it is nearly so?—Yes.

2430. (*President.*) And the variation in the amount of pressure in consequence would be considerable?—Yes, very considerable.

2431. What measures were adopted to remedy this state of things?—The chief measure was the deposit of additional material, generally similar in character to the rubble, in the foundation outside, and around the head. This material was not classified with so much care, simply because it was not necessary; it had no superincumbent weight to bear. The object was to add weight simply, and to endeavour, as far as possible, to bring the bottom to its bearing.

2432. Was it added all round?—No; some material was added all round, but the great mass was added opposite the settlement—about 15,000 tons; it was in fact 14,748 tons.

2433. What did you do to correct the level of the masonry?—The masonry was taken out down to the F course, and a compensation course was put in; and all experience up to this time, as far as my observation has gone, has served to show that this is at least as strong as any other portion of the work.

2434. Have there been any further failures since that?—Not in that part; there have been a few slight cracks at different parts of the head. There has been a disturbance on the south-east side, which I attribute to the sea getting into the drain formed for the purpose of sewage; but confining our attention, for the moment, to the portion of the head over which this settlement took place, I regard that as a fixture. Perhaps the Committee would like to know (referring now to the disturbance which has taken place on the south-eastern side by the sea getting into the drain, and blowing up a portion of that masonry) that we had a similar disturbance, though not from the same cause, nor quite to the same extent, in the case of the circular head of the inner breakwater. That masonry was replaced in precisely the same way as the masonry has been replaced at this north head, and it has been now since 1859 without any disturbance worth mentioning; and the guns have been in it for several years, and have been frequently fired from it.

2435. (*Major-General Simmons.*) Do you anticipate any further subsidence in this masonry calculated upon 3 feet 3 inches?—I do not.

2436. I speak of a general subsidence over the whole?—I do not know what amount of weight may be proposed to be placed upon it; but with any reasonable weight, I do not think that there would be more than an inch, or a couple of inches.

2437. (*Colonel Harness.*) What do you call a reasonable weight?—I should say, for the information of the Committee, that on the Inner Fort,—that is to say, the circular head of the inner breakwater, there is a weight of 2·29 tons per superficial foot on the Yorkshire ragstone, and a small fraction over three tons on the same area of bottom of the bay. On the Yorkshire ragstone at the North Head Fort, as it was left when possession was given over to the War Department, there was a pressure of 1·15 tons per foot, so that there is rather more than a ton per superficial foot yet to spare before the pressure at the North Head will equal the pressure at the Inner Head.

2438. (*President.*) That was when you had brought it up 19 feet 6 inches above low water?—Yes.

2439. (*Major-General Simmons.*) Has your attention been called to a late subsidence in the Inner Pier Head, in consequence of which the head of a pile forced itself up to the asphalte floor within it?—That was so about two or three years ago. I know of nothing since that date.

2440. Having that fact before you, do you think that it is probable that this subsidence may still go on as this work proceeds?—I do not know what proportion of weight may be proposed to be added. I am speaking more of these external walls. As yet I see that there is more than a ton to spare as compared with the Inner Head, and it was upon that that I grounded my opinion.

2441. (*President.*) Do you imagine that there is any wear in the shifting of the materials going on outside the walls of the fort?—To no appreciable extent.

2442. (*Colonel Harness.*) Have you made observations after different severe gales?—Yes.

2443. What effect have you observed to take place, after the severest gales, on the mass itself?—I think that I saw some sections here which indicate that. The blue line is in May 1867, and the dotted line is in May 1868; there is an interval of a year.

2444. (*Major-General Simmons.*) It would appear from the lower sections that the breakwater had grown very considerably; was there no fresh material added in the interval between 1867 and 1868?—The Committee will see that this (pointing to a section) has been filled up by depositing some additional material, and the object has been to fill it up so as to have as little as possible of a re-entering angle; and the heavy sea, being from the south and south-east, has just dragged it along.

2445. In fact, it is forming a shingle beach there?—It is.

2446. At the cost of the breakwater?—The material is drawn from the breakwater; but there is no appreciable disturbance in the breakwater. The breakwater as a mass remains sound and good; the sea claws out some of the small material.

2447. Just the light material on the surface?—Yes; but this being in a re-entering angle, I do not think that the Committee can draw any general inference from it; if it were straight the flat slope would generally terminate at from 12 to 15 feet under low water; that is an invariable rule at Portland.

2448. (*To Lieut.-Colonel Belfield.*) Has there been any subsidence since the work has been handed over to the War Department?—Yes, between May 1868 and November 1868 there has been a subsidence going on upon the whole circle, the greatest amount at any point being one and one-twelfth of an inch, and the minimum amount being about half an inch.

2449. At what point of the circumference was the maximum subsidence of which you speak?—The greatest amount was on the western side, at a point between Nos. 1 and 2 radial walls.

2450. What was the amount at that point?—One and one-twelfth of an inch.

2451. Have you the successive subsidences on

the circle from that point?—Yes; I have them the whole way round. The next point is between Nos. 3 and 4; it is ·78 of an inch. The next point is between Nos. 5 and 6, and that is ·72 of an inch. Between walls Nos. 7 and 8 it is 1·02 of an inch; between Nos. 9 and 10 it is ·6; between Nos. 11 and 12 it is ·54; between Nos. 13 and 14 it is ·72; between Nos. 15 and 16 it is ·6; between Nos. 17 and 18 it is ·6; between Nos. 19 and 20 it is ·6; between Nos. 21 and 22 it is ·66.

(*Mr. Coode.*) When you consider that lineally they are 600 feet apart, and remember the height of the work, and the nature of the bottom, I do not think that it is much. My own opinion is that it is satisfactory.

2452. (*Colonel Harness.*) The greatest settlement there is near where your settlement was before, which you accounted for by the marl?—Not the greatest. At No. 7 there is one inch.

2453. It is the same general direction, is it not?—(*Lieut.-Colonel Belfield.*) Quite so.

2454. (*President.*) But No. 7 appears to have been the weakest all through?—Yes.

2455. Have any cracks shown themselves in the masonry during that period?—The movement of the cracks has been very slight indeed. They have all been gauged and carefully watched, and the opening is exceedingly small.

2456. During that period, what has been done within the ring which could have any effect?—Nothing.

2457. Have you not removed a good deal of stuff?—We have removed it; but it so happens that we have not put in additional weight on the portion that has sunk most.

2458. Still there has been an alteration of the distribution of the weight inside the circle?—Yes; but not such as would have any effect upon it, for no weight has been added over that part which has subsided most.

2459. Can you give the Committee the absolute heights above the low-water mark of the various points on the top course?—The levels of the top of the upper course of masonry at the North Head, above low-water mark, ordinary spring tides, taken at the same points at which I have already given the subsidences, in reply to questions Nos. 2450-51-52, are as follows:—

	Nos.	Ft.	In.
Between radial walls ..	1 and 2 ..	18	11½
„ „ ..	3 „ 4 ..	18	8½
„ „ ..	5 „ 6 ..	18	8¼
„ „ ..	7 „ 8 ..	18	8¾
„ „ ..	9 „ 10 ..	18	10
„ „ ..	11 „ 12 ..	18	11½
„ „ ..	13 „ 14 ..	19	1¼
„ „ ..	15 „ 16 ..	18	11¼
„ „ ..	17 „ 18 ..	18	11½
„ „ ..	19 „ 20 ..	19	0
„ „ ..	21 „ 22 ..	18	9½

2460. How many cubic feet of *pierre perdue* make a ton in air, and how many in water?—In air about 20 cubic feet go to the ton; in water about 36·9 cubic feet.

2461. At the Inner Pier-head, what is the pressure per square foot upon the upper surface of the *pierre perdue*?—With the best information we have, the pressure on the upper surface of the *pierre perdue*, under the footings of the outer masonry ring, is 2·02 tons per square foot, exclusive of the pressure due to a depth of 24 feet of water.

2462. What is it on the natural bottom, supposing the pressure to be transmitted vertically through the rubble?—Under the same footings it is 2·83 tons per square foot, exclusive of the pressure due to 53 feet of water.

2463. Supposing the pressure to be transmitted through the rubble at an angle of 60°, what will be the average pressure per square foot on the natural bottom over the entire site?—It will be 1·9 tons, exclusive of the pressure due to the 53 feet of water.

2464. At the North Head Fort, what will be the pressure per square foot on the natural bottom under the existing outer masonry ring, and under the concrete bed when completed?—If transmitted directly downwards, it will be 2·47 tons under the masonry ring, and 2·4 tons under the concrete bed: in both cases exclusive of the pressure due to 58 feet of water.

2465. If the pressure be transmitted through the rubble at an angle of 60° from the outer edge of the footings, what will be the average pressure over the entire site?—It will be 2·06 tons per square foot (over a circular base of 260 feet in diameter), exclusive of the pressure due to 58 feet of water.

2466. Supposing that the superstructure, including the foundations as far as the plane at the bottom of the concrete bed, will weigh as follows:

For a two-tier work ..	57,926 tons,
For a one-tier work ..	50,248 „
For turrets	61,721 „

what will be the respective pressures per square foot upon the bottom, supposing those pressures to be transmitted directly downwards?—Assuming that these weights be distributed evenly over the entire area, and be transmitted directly downwards through the rubble, from the underside of the footings of the outer masonry ring, and of the enclosed concrete bed (giving a circular base of 217 feet in diameter), it will be—

For a two-tier work ..	3·31 tons,
For a one-tier work ..	3·11 „
For turrets	3·39 „

exclusive of the pressure due to 58 feet of water.

2467. Supposing, as in the case of the Inner Pier-head, the pressure be distributed through the rubble at an angle of 60° from the outer edge of the footings, what will be the respective average pressures per square foot on the natural bottom over the entire site?—

For a two-tier work ..	2·69 tons,
For a one-tier work ..	2·55 „
For turrets .. .	2·78 „

exclusive of the pressure due to 58 feet of water.

2468. (*Colonel Harness.*) Where have you lightened the weight?—It has not been lightened anywhere. There is the same amount of material.

2469. It has been taken from one place, and deposited elsewhere?—Yes, for a time, and then put back again.

2470. What has been the alteration of distribution?—Over the outer half of the circle, towards the sea, the loose hearting was taken out to a depth of about 7 feet, and was distributed between the radial walls, but only for the purpose of being broken up. It was then made into concrete, and put back again.

2471. (*President.*) Then what was taken out from inside this ring was thrown upon this part (pointing to the section)?—Yes. It so happened

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that in this part (pointing out the same), where the settlement is, most of the workshops were; there was one little smith's shop, and the timber was there.

(*Mr. Coode.*) But there was no material weight.

2472. (*To Lieut.-Colonel Belfield.*) In fact, you do not think that any of the operations which have been carried on have had any influence upon the work?—No.

2473. (*Major-General Simmons.*) Have you had any heavy gale of wind from the eastward which would cause it?—No. There has not been much beyond spray over the work.

2474. Have the late gales broken over it at all?—No; they have all been from the westward.

2475. (*President, to Mr. Coode.*) You have heard Colonel Belfield's statement with regard to the settlement which took place between May and November, 1868. Do you consider that settlement of any great importance?—No, I do not. I would only suggest upon that, what I should probably have suggested otherwise—namely, that in all future operations it would be very desirable to equalise the distribution of the weight as much as possible. When we regard the mode in which this foundation is formed, we must, as I said at the outset, be prepared for some amount of subsidence; indeed, we have allowed originally for 3 feet, which has fully taken place. The only thing which has now to be done is to take care, in bringing up any future work, to bring it up as equally as possible. I should say, perhaps, with reference to a question which was asked of Colonel Belfield just now, that we had two very severe gales—one in January 1867, and the other in March 1867. An old seafaring man at Weymouth, who was a great authority there—a man of between 60 and 70 years of age—assured me that there had never been anything like it in his time, from the south-east.

(*Lieut.-Colonel Belfield.*) I was speaking of a period more recent than that.

(*Mr. Coode.*) I only wished to state what a severe test the work had been exposed to.

2476. (*Major-General Simmons.*) What was the effect of that gale?—It was a gale which caused the water to get into the drain and to disturb the masonry, which was replaced.

2477. It did not cause any effect upon the part where the original slip had taken place?—No; certainly not.

2478. (*President.*) You are aware that the operation which is now going on is taking out the hearting of the centre, and substituting 10 feet of concrete?—Yes.

2479. Do you think that when that is brought up it will be equal to bearing the whole weight of the buildings put upon it by the fort?—I should like to know what the weight per superficial foot would ultimately be, before giving an answer to that question. If Colonel Belfield could furnish me with anything approaching to that, I might give an answer.

(*Lieut.-Colonel Belfield.*) I should like to see the plans.

2480. (*To Mr. Coode.*) How much per superficial foot would it be safe to put upon it?—I should say up to 2¼ tons upon the foundation courses, or 3 tons upon the bottom of the bay per superficial foot, judging by the experience of the inner head, because the pressures there are 2·29 tons and 3·06 tons respectively, and the work has stood. There was just a little opening at the arch over the doorway, but it is very small,—I think something under a quarter of an inch.

2481. (*Major-General Simmons.*) What height is that arch at the inner head run up above low water?—About 36 feet above low water.

2482. (*President.*) I think you stated that you had calculated that it would bear a weight of 1·90 or 2 tons upon these foundations?—Yes.

2483. But do you consider that it would be safe to put the same weight over the whole area of the fort?—Considering that it is a circle, and that it is completely enclosed by this mass of solid material, I do not think that there would be any great difference between the weight which the central core would bear and the weight which the other part would bear. At the same time I should say, that had it been known originally that any great weight was intended to be put upon the centre, more care would have been taken in the selection of the material.

2484. (*Major-General Simmons.*) What is the difference between high and low water mark?—From 6 feet 9 inches to 7 feet in a spring tide. Neap tides vary very little there: the average is about 2 feet 3 inches or 2 feet 6 inches.

2485. If the building placed upon the foundation exceeded that upon the inner head by about three-quarters of a ton to the square foot, do you think that there would be any risk of a settlement?—If it were much to exceed two tons I should feel some hesitation in answering the question; but we know that to the extent of two tons per superficial foot the inner head has borne the weight very well. Upon the face of this drawing I would suggest—if it be practicable—the desirability of bringing this weight either more towards the outer circumference of the ring, or of carrying it further in towards the centre. What I should fear with regard to this particular construction would be that the weight would be just at rather a critical point, a sort of junction point. If it could be taken nearer to the outer ring of the masonry, so as to bring it wholly within the scope of the radial walls, or wholly inside the radial walls, I should like it much better. My own view is that it is better to bring it out, if is compatible with other considerations.

(*Lieut.-Colonel Belfield.*) It is inside now.

2486. (*To Mr. Coode.*) A 10-feet slab with concrete is a very good bearer for it, is it not?—Yes; but we must look to what we have below; it might break. Besides that you would have a uniformity in the foundation itself, which is a great point. We know that out to this point (pointing to the section) all this material is of a uniform character. That (pointing out the same) is going out to a point where you get well down the bank.

2487. (*President*). This acts like a wedge, and I do not see how this material can get away?—It cannot get away, but it might compress.

2488. When these foundations were constructed, your idea was that the great weight would come between the end of the radial wall and the outer circumference?—I could only conclude that from the drawings furnished by the War Department.

2489. That was your impression?—Yes; and it was evident from the drawings furnished that the central part was little more than a central court-yard, or a parade.

2490. (*Major-General Simmons.*) What is the total diameter of this fort?—200 feet at low water, and 200 feet at its present level; it is vertical within those limits.

Nothe Fort.

2491. (*President, to Lieut-Colonel Belfield.*) I think that you have reported that there has been some slip at the Nothe Fort?—There have been some slight slips of earthwork recently constructed, or which was in course of construction when the late heavy rains commenced.

2492. And the cost of remedying that would be 200*l.*?—The simple cost of repairing would not be above 40*l.* With a view of rendering any such slip impossible for the future I proposed to the Director of Works that in certain parts of the slips it might be well to adopt further precautions. About 200*l.* is the outside amount. I do not think that we shall want so much.

2493. Will you have in your contingencies a sufficient margin to cover that extra expenditure of 200*l.*, or will it require an addition to the estimate to complete, which you sent up?—It will be an addition to the estimate.

2494. The contingencies which you have taken will not cover it?—No.

East Weir Batteries.

2495. (*Major-General Simmons.*) There has, I believe, been no re-appearance of anything like a movement where the old movement was, at the East Weir Batteries?—It was not in the East Weir, but on the north side. There is a movement going on there, but it has nothing to do with the works.

2496. (*President.*) Do you mean on the slope of the north side?—Yes.

2497. Where the drainage was carried on before?—Yes.

2498. (*Major-General Simmons.*) There was, some few years ago, a heavy slip at the place where the Weir Batteries are now situated; has there been any tendency to move on that old slip?—No; there is no slip there.

2499. Formerly there was?—Yes, there was, a long time ago; and one or two earthen batteries were abandoned; there is no slip there. (The witness pointed out upon the plan where the slip had taken place.)

2500. (*President.*) Does that slip make you apprehend any danger to the site of the Battery No. 1? Is it commenced?—No; it has not been commenced on account of our not being sure that the precautions taken would prove sufficient.

2501. Does what is now taking place make you apprehend that further drainage will be required before you can trace the Battery No. 1?—It does. *Lieut.-Col. E. Belfield, R.E., and J. Coode, Esq., C.E.* 5 Feb. 1869.

2502. And that therefore some further expenditure will be required there?—Yes.

2503. Is that further expenditure provided for in the estimate with which you have furnished the Committee?—No.

2504. (*Major-General Simmons.*) Has there been any tendency to slip there?—This is the place where there was a slip some years ago (pointing out the same). There were four drains, three of them very deep drains, and they have answered their purpose admirably; and the ground has not moved at all. The fourth drain, I am told, did not go so deep; and in the late heavy rains there was a movement.

2505. (*President.*) Does not the line of a fence come down?—Yes (pointing out the same).

2506. Is any damage done on this side of the fence (pointing to the plan)?—No damage of importance. The whole surface is drained.

2507. (*Colonel Harness.*) That drainage was only labour?—Just so.

2508. (*President.*) Is No. 6 Battery traced out?—Yes.

2509. Have you begun upon it?—Yes.

2510. And has any necessity for any further drainage appeared?—No.

2511. It is only as to No. 1 that more will be required?—Yes.

2512. (*Major-General Simmons.*) And it will not add materially to the estimates if it is done by convict labour?—It will add very little.

2513. (*President.*) I suppose that you had a great amount of wet in December?—An extraordinary amount of wet.

2514. This drainage has been found sufficient to carry off all this excessive amount of water which has fallen?—Yes.

2515. (*Major-General Dickson.*) Those works stand well?—Yes, quite so.

2516. (*President.*) It appears that at present there is only one communication between the Vern Citadel and the Weir Batteries on the right flank, would there be any possibility of making a second communication on the left flank?—I think that one could be arranged without difficulty from the main entrance.

2517. (*Major-General Simmons.*) Which would give easy access to the left battery?—Yes.

The witnesses withdrew.

(*Adjourned.*)

Wednesday, 17th February, 1869.

Present:

Admiral the Hon. Sir F. W. Grey, G.C.B., R.N., *President.*

Major-General C. Dickson, C.B., V.C., R.A. | Colonel H. D. Harness, C.B., R.E.
Major-General J. L. A. Simmons, C.B., R.E. | Colonel T. Elwyn, R.A.

Lieut. J. C. Ardagh, R.E., *Secretary.*

Colonel W. F. D. Jervois, C.B., R.E., further examined.

2518. (*President*). With reference to the way in which the first detailed Schedule in 1862 was made out, the Committee desire to know whether the cost of the lands was included in that Schedule —Yes, it was included.

2519. Did the estimates at that time also provide for any iron shields?—No. *Col. W. F. D. Jervois, C.B., R.E.* 17 Feb. 1869.

2520. Were any iron shields contemplated at that time?—In 1860, iron embrasures were contemplated only in the Spithead Forts.

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2521. In the Report of the Defence Commissioners, I see this passage: "Embrasures of wrought-iron"?—Yes; at Spithead.

2522. Does that mean a shield?—When that was written there was no experience to guide us as to the importance of iron in defences, and the first plans of the Spithead Forts were for masonry. There was a general idea of strengthening the embrasures with iron, but no design was made; and there was no decision as to the extent to which iron should be applied.

2523. The passage in the Report of the Royal Commission appears to apply to the embrasures?—Yes; that there shall be iron to some extent, but not to the extent that was contemplated afterwards. In general terms, it would not include provision for iron shields.

2524. (*Major-General Simmons.*) Does not the plan which was submitted in November 1860 to the Queen for approval as the plan of Picklecombe include iron shields both for the casemates and for the guns on the top of the casemates?—I think that is the case. The plan shows iron shields, but it was prepared at a subsequent date to that to which I have just referred. When those plans were submitted, we had no distinct idea of the extent to which, and the mode in which, we should apply iron. It was represented that there were to be iron shields, but in none of those cases to which you now refer were iron shields specially provided for in the estimates. The works were to be constructed so that shields could be placed in them at any time, and it was intended that provision should be made for the shields at a subsequent period,

2525. (*Colonel Harness.*) At that time had you no idea how large the cost of iron shields would be?—No.

2526. You had no idea of the thickness of iron that would be necessary?—None; nor of the cost, nor of the nature of the construction; nor could we form a distinct idea of the sized place that the embrasures would occupy with reference to the artillery that would be mounted behind them. There was every reason for postponing that provision, and for postponing the making of an estimate to provide for iron shields.

2527. At that early period had you any reason for supposing that iron could be used in shields at a very much less cost than is found to be the case now?—Our opinion at that time was that iron could be employed for shields at very much less cost than we now find necessary.

2528. (*Major-General Simmons.*) Still if you presented a total estimate of the work to Parliament, would you in that total estimate have included the total cost of shields such as would have been calculated to resist the artillery of that day, designed according to the knowledge you then possessed?—I think not, with the information then before us. I think it should be regarded as a similar thing to providing any other accessory to the armament of a work, such as a gun or a gun carriage.

2529. (*Colonel Harness.*) Up to 1862 what was the most powerful gun for sea defences?—I think that at 200 yards range the 68-pounder was.

2530. (*Major-General Simmons.*) If they had been provided to resist 68-pounders or the guns of that day, you would then have had to provide for the additional cost to bring them up to the strength necessary to resist the artillery of the present day?—Of course, if we had provided an insufficient sum for the purpose, we should have had to have added very largely to it afterwards.

2531. (*President.*) It was decided by the Government after considering the Report, that they would raise the money for the works and the lands by loan, but would leave the armaments and the floating defences to be provided for in the Annual Estimates?—Yes, that was in 1860.

2532. Did you then consider that the iron shields would form part of that expenditure, or that it would eventually form part of the expenditure to be provided under the Act of Parliament?—At that time there was no special provision made for them in the Loan, nor was any proposal made for providing for them in the Annual Estimates.

2533. When you decided upon leaving a large opening in front of the fort to be protected by iron, there must have been some idea that a further sum of money would be required to complete that work, either as part of the armament, or as part of the work, one or the other; or in which way was that contemplated?—Yes; but no special provision was made for them until 1867.

2534. Then would not the public from the Report entertain that the total expenditure required would be a sum of 6,190,000*l.*, or whatever it was, although that would not be sufficient to defray the whole cost?—Just in the same manner as the public would have an idea from the original Report that the armaments would cost 500,000*l.* for all the works, whereas they will probably cost about 2,000,000*l.*

2535. (*Major-General Simmons.*) But there is this difference, that in the one case the armament is provided for upon a reduced scale, and in the other case the shields had been omitted altogether?—The two cases are, however, analogous. The work was provided for, but a certain addition was left to be provided for hereafter. The armaments were estimated for on what proved to be an insufficient scale, and a much greater sum had to be provided for afterwards.

2536. In the Schedule of the Fortification Act of 1863, the column for the estimate is headed, "Total estimated cost of the works." Is it to be understood that that "total estimated cost of the works" did not include any of the shields at that date?—The provision for shields was not specifically made, but the estimate sufficed for a proportion of them,

2537. But it included none of the ironwork?—The first time a specific item for the ironwork was brought forward was in 1867.

2538. Then the estimate that was represented as the total estimate was not the total estimate of the works?—The estimate did not include iron shields as now contemplated.

2539. Then the iron shields were not provided for as part of the armament?—No.

2540. (*Colonel Harness.*) It was a total estimate for such works as were connected with the Commissioners' Report?—Yes.

2541. The necessity for iron shields of the magnitude now required is a new element introduced since that time, and requiring a special and different provision?—Yes, entirely so.

2542. (*President.*) In 1864 I presume that iron shields were contemplated?—No doubt.

2543. And then we have again a column of "Total Estimated Cost," and there is a sum for the total cost of the works. Then comes the item of "Incidental Expenses," "Site for the Central

Arsenal," "Lands, including Cost of Survey," making "6,920,000*l.*"; and any person looking at that would assume that it was the total cost required to complete the works, exclusive of the armament?—It was thought desirable to postpone the provision for those shields until such time as we were in a position to say what their cost would be.

2544. (*Major-General Simmons.*) As the works would be totally indefensible, and incapable of occupation in war without shields, they could hardly be considered as complete without having those great holes, left for shields, stopped?—I do not admit that they would be "totally indefensible," or that they would be incapable of occupation in war without shields; the openings for those shields are not, after all, so much larger than the embrasures in the olden time. They are 12 by 8; and it will be found that many old masonry embrasures were something like 8 by 8. The works were purposely constructed in such a way that iron shields could be added at a future time when we had gained sufficient experience to determine the description and cost of the shields we should provide.

2545. (*President.*) You do not consider, I presume, that this sum would be sufficient to complete the works, so as to afford that complete protection that was contemplated in the instructions to the Royal Commissioners; or, in other words, if you ask for 500,000*l.* more now, did you, in 1864, contemplate that that sum of 6,920,000*l.*, which you stated was the total estimated cost, would be sufficient to put those works into that complete state of defence that the Royal Commissioners contemplated?—The strength of the great mass of the works in question is really far beyond what the Royal Commissioners contemplated; these works, as carried out, are stronger, even without the shields at the openings, than they would have been if they had been constructed according to the views prevailing in 1859 and the beginning of 1860, when the Royal Commissioners reported.

2546. I am talking now, not of the whole line of defence, but of the individual works—take, for instance, Picklecombe. Do you consider, taking the works individually, that each work then contemplated could have been put into that complete state of defence which was necessary for occupation and for the armament, for that sum of 6,920,000*l.*?—I do think so. Supposing the iron shields not to have been provided, other measures could have been taken for filling up the port-holes. If it was thought necessary, we would then have obtained such a defence as would probably be effective against attack. The shield is a great improvement, and renders the work a great deal stronger; but to my mind it was a good plan to defer bringing forward any estimate for their provision until we were more clear as to what we should provide.

2547. (*Major-General Simmons.*) Would it have been wise, under those circumstances, to have noted in those Schedules that the total estimate was exclusive of iron shields for the protection of those works, and was liable, therefore, to an increase of half a million of money?—I think not, for we could not then even form an approximate estimate of the cost of the shields. Your observation might also apply to the armament.

2548. The apparent difference between the armaments and the works is this, that with regard to the armaments, there has not been an annual estimate presented to Parliament, containing a schedule of the probable total cost of the armaments; whereas in the case of the works, there has been an estimate presented almost annually to Parliament, in which the cost is represented as the total probable cost of the works?—I can only repeat what I have before stated, that provision for the iron shields was deferred until we could form some idea as to what sum we should have to provide for them.

2549. (*President.*) Are we to understand that the schedules do not include the iron shields because it was thought desirable to defer that until you had become better acquainted with the subject?—Certainly.

2550. Does it not, nevertheless, seem that it was rather likely to mislead people when they saw the total estimated cost stated at one sum, when it now appears that that sum would not be sufficient to provide any iron shields of any sort?—I think you will find that in most estimates extending over a course of years, items will arise which were not originally provided for; and in the case now under consideration, when questions relating to the power of attack and of defence were in the height of their transitional state, it was impossible to make any distinct proposal on the subject of iron shields.

2551. (*Colonel Harness.*) So long as the 68-pounder was the most effective gun against coast defences, had you any reason to suppose that the original estimate would be insufficient?—No; when we made the estimates to the best of our ability on the original Royal Commission, we rather believed that we were making them in excess.

2552. The use of such shields as would be required, if adopted, against 68-pounders, would have been provided under that estimate?—They could have been provided in that estimate if they had been ordinary bar shields, such as were at first contemplated.

2553. (*President.*) The result is this, that up to 1867 you did not think yourself in a position to lay before Parliament or the public any estimate as to what would be required for iron shields?—No; and even since then it has been considered necessary to increase the strength of the iron therein provided for.*

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* Colonel Jervois subsequently forwarded the subjoined memorandum respecting the course adopted as regards iron shields:—

MEMORANDUM.

When the Defence Commission reported at the beginning of 1860, the only application of iron contemplated by them was a limited quantity at the throats of the embrazures of the Spithead Forts, and was of an inexpensive description.

Towards the end of 1860, experiments had taken place which led to proposals being made for applying shields made of iron bars of a comparatively inexpensive character, in lieu of a portion of the masonry in many other casemated works of sea defence.

It was considered that the cost of the iron thus proposed to be applied could be defrayed from the sums provided in the original estimates; but when guns of larger size and greater power were introduced, a necessity arose for having iron shields of a much more expensive character than was first contemplated, and the strength of the great mass of the work was moreover considerably increased. No data, however, existed on which to determine the probable cost of the more expensive shields thus rendered necessary; and no specific provision was made for them until 1867, at which time it was considered an estimate for them

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2554. The Committee are a little uncertain as to the position in which they stand as to the Thames Forts and Portland Breakwater Fort. Signed plans have been placed before them for the Thames Forts. Are those forts sanctioned and determined upon?—As regards the Thames Forts, in consequence of the present unsettled state of questions relating to the application of the Moncrieff system, it is difficult to say with certainty whether those works will be carried out according to the plans laid before you. We must, however, form our estimates on definite plans, and according to our present information with regard to Captain Moncrieff's system, the plans referred to are those which will most probably be carried out, and on which the estimates have been framed. With respect to the Portland Breakwater Fort, a doubt has been expressed respecting the foundation for that work, and the plan laid before you may consequently be subject to alteration.

2555. That hardly answers my question. I believe that under the instructions of the Secretary of State, all the plans intended to carry out the recommendations of the Royal Commissioners are first referred to the Fortifications Committee, and then to the Defence Committee at the Horse Guards, before they are approved of—is not that so?—Yes.

2556. Are we to accept these plans that you have laid before us as the plans approved by the Secretary of State?—Yes; but subject to such alteration as additional information may hereafter render it desirable to make.

2557. (*Major-General Simmons.*) Not being a member of the Fortification Committee, do you consider that I am warranted in accepting any plan put before this Committee, and signed by you, as an approved plan of the works intended to be carried out, and which the Secretary of State has desired to be laid before this Committee?—Yes; but the plan is of course subject to any alteration which circumstances might induce the Secretary of State to direct at any future time.

2558. (*President.*) Are we to consider the plans as the official plans authorized by the Secretary of State or not?—The plans you refer to are the authorized official plans, prepared according to the light of the present day, and the estimates which have been laid before you have been based upon them.

2559. (*Major-General Simmons.*) Are the Committee to understand that the construction of forts according to the designs in which the Moncrieff system has been introduced is deferred, pending the experiments to be undertaken with the 12-ton gun?—Yes; that is to say, so far as regards those parts of the works which would be affected by the adoption of the Moncrieff system of mounting guns.

2560. If the Moncrieff system did not answer with the heavier guns, you would have to fall back upon the plans which had been approved previously to the introduction of the Moncrieff system?—Yes.

2561. Would it not be well for the Committee in considering their estimates, to provide for the amount necessary to complete the work according to the plans approved, previously to the idea of adopting the Moncrieff system?—I think not. I think it would give an erroneous idea of the sum likely to be required. In my mind, there can be no reasonable doubt that the Moncrieff system will answer for the heavier guns. Therefore, I should myself adopt the estimates in which the Moncrieff system is provided for.

2562. The Committee have had before them an estimate of the Plymouth Breakwater Fort for the whole cost of completing it with ironwork. Does that include the additional strengthening given in consequence of the late practice at Shoeburyness?—Yes.

2563. What is the nature of the strengthening that has been decided upon?—There are additional uprights in the rear part of the wall, with wood between each upright; behind the side of each port is a massive upright, in which there is a notch cut for the reception of an additional 5-inch plate above, below, and on either side of the port. There are other matters of detail in which it is proposed to strengthen the structure, but these are the main additions.

2564. Are the ports constructed for muzzle-pivoting carriages or for the ordinary service carriage?—They are constructed for muzzle-pivoting carriages.

2565. Do you feel sufficient confidence in the muzzle-pivoting carriages which have been already tried to feel certain that you are going to arrive at a satisfactory solution of the muzzle-pivoting question?—I think there is no doubt that we shall get a satisfactory muzzle-pivoting carriage.

2566. What would be the reduction in the size of the embrasure by the introduction of the muzzle-pivoting carriage?—1 foot 3 inches in height.

2567. The breadth would remain the same?—Yes, because the ordinary carriage affords muzzle-pivoting laterally.

2568. Will the muzzle-pivoting carriage be a much more expensive carriage than the ordinary carriage?—Yes.

2569. Have you any idea what addition it will make to the cost?—I cannot at present say.

2570. (*President.*) Would it be dearer than the Moncrieff carriage?—No; I think not.

2571. (*Major-General Simmons.*) Would it be an addition of 200*l.* or 300*l.*?—I believe it would cost at least that sum additional.

2572. (*President.*) In the Bovisand and Picklecombe Batteries, is it contemplated to have any arrangement for torpedoes for closing the entrances to the sound on each side?—I have not contemplated making any special arrangements for torpedoes in those works. My view is that such arrangements may in this case be better provided for on the shore, or the torpedo wires may be brought in at the rear of the work.

2573. The Defence Commissioners recommended a work upon Knatterbury Hill. I do

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could be made. It was then that a specific item for iron shields was first introduced into the Fortification Schedule; and the total estimate of the Schedule of the Fortification Act was increased accordingly, 1,000*l.* being taken for each shield contemplated.

Subsequent experience has however shown that this sum was insufficient; and it is now necessary to propose shields of a more expensive character to resist the artillery of the present day. They will be made so that their strength may easily be added to hereafter, if necessary. The total sum for shields, however, will not be so great as in 1867, in consequence of the adoption, in certain places of the Moncrieff system of mounting guns.

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not find that they recommended any military road. What alterations have been made as to the plan that has been adopted, and what is intended to be put there?—The defence of Whitesand Bay against a landing has been provided for, by constructing a good communication for the passage of troops and artillery along the top of the cliffs.

2574. Then the Committee may understand that the military road has taken the place of the work?—Yes.

2575. I find that Knatterbury is still included in the Schedule; is it intended to construct any work on that position?—No.

2576. Then the 15,000*l.* which was taken for Knatterbury and Polhawn was applied to the construction of Polhawn Battery and the military road?—Yes.

2577. In what year was the military road first designed?—In 1862.

2578. (*Major-General Simmons.*) Was the military road included in the estimate for the Antony Defences?—No.

2579. Was the omission of the work on Knatterbury Hill approved by the Fortification and Defence Committees?—That is a question that would not be brought before the Fortification Committee.

2580. Would not the substitution of a military road for an approved work be a subject for the Committee to consider?—The Fortification Committee was appointed for the consideration of designs for works—not with reference to a case of that sort.

2581. (*President.*) Are we to understand that the military road has taken the place of the work on Knatterbury Hill?—Yes.

2582. Did not the Defence Commission also recommend that the redoubts on Maker Heights should be repaired and strengthened; is that given up or postponed?—There is no present intention of doing anything on Maker Heights.

Drake's Island.

2583. (*Major-General Simmons.*) With regard to Drake's Island, it is stated that a part of the expenditure is intended to be charged to the Annual Estimates, 566*l.*; what portion of the work does that refer to, and upon what principle has it been determined so to charge it?—The magazines that were first constructed at Drake's Island were built according to a design prepared about eight years ago, and since then many improvements have been recommended for magazine arrangements generally. The principle is that once having been completed, the cost of subsequent alteration should not fall upon the original estimate of the work.

2584. (*President.*) That it should be regarded rather as a re-modelling than as a completion?—Yes.

2585. (*Major-General Simmons.*) Has the Secretary of State decided that the total cost is to be divided in this way between the Loan and the Annual Estimate?—He takes a sum in the Annual Estimates for alterations for adapting works to modern armaments, and this sum is applicable to such purposes.

2586. (*President.*) He has approved of the principle you have mentioned just now, that of providing for the re-modelling out of the Annual Estimates, and for the completion only out of the Loan?—He has approved of the principle, as one applicable to works in general, including, of course, the Loan works.

2587. (*Major-General Simmons.*) A very large amount of expenditure, according to the statements given to the Committee, has been included in the expenditure under the Loan, for improvements and alterations of works that have been already executed?—That expenditure was for improvements undertaken during the progress of the works, and before they were completed.

2588. (*Colonel Harness.*) In every case where the magazine accommodation, or the provision for the armament had been completed, and the expense charged against the Loan, if an alteration becomes necessary in consequence of a change in the ordnance, such a double charge would not stand against the Loan, would it?—No.

2589. Whether the whole work be completed or not, if its parts had been completed once, and the expense charged against the Loan, and any change became necessary in consequence of a change in the ordnance, the alteration ought not to be charged against the Loan, even if the work was incomplete?—If the necessity for the alteration became apparent during the progress of the work, the expense would properly be chargeable to the Loan, and the estimates were arranged from time to time to meet such cases.

2590. (*President.*) In estimating the cost of shields, have you taken the amount which you consider will be necessary to provide a shield upon the most approved plan, to be decided upon hereafter?—Yes.

2591. (*Major-General Simmons.*) Does the estimate you have given for the shields provide for the additional strength which you consider requisite, consequent upon the experiments made against the Gibraltar shield?—Yes; it provides for what we consider to be sufficient to meet the attacks of artillery at the present time.

2592. I observe in this Schedule that some of the shields are put down at only 600*l.*, while the majority of the shields are put down at 1,300*l.*?—Those estimated to cost 600*l.* are for works in which the shields are only 7 feet by 7 feet, as at Slough Battery and St. Katharine's Island. The larger sum is for shields 12 feet by 8 feet.

2593. Will they be of the same strength, with the same powers of resistance?—Yes; but smaller in area.

2594. (*President.*) In a fort, like Garrison Point, the vertical intermediate space is covered with iron; is the intermediate space covered with the same thickness of iron as the shields themselves?—The intermediate space has a lesser thickness of iron, but rests against a solid backing.

2595. It is only the outer part of the shield that is continuous?—Yes; only the outer part. The intermediate granite part is purposely cut away in order to allow of space for a special backing to the iron, which is continuous throughout the outer surface.

2596. (*Major-General Simmons.*) What was the amount of the original estimate for the defences of the Antony Position?—In the annual estimates of 1860-61, it is stated at 350,000*l.*

2597. Did the estimate which was placed before the Defence Commission in 1860, include the intermediate work between Tregantle and Scraesdon, which you said had been approved of by Parliament?—As regards the intermediate work to which you refer, it was dropped; it was not considered necessary. The fact is, that it would occupy ground which is *en glacis* from

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Tregantle, and which is already commanded by Tregantle Fort.

2598. It would have seen into some of the large and extensive hollows in front of it, which are not at all seen either from Tregantle or Scraesdon?—I think not. Those hollows may, however, be seen into from a line of parapet in front of a road between Tregantle and Scraesdon, and which may be constructed at any future time.

2599. (*President.*) Then I apprehend that the Defence Commissioners, in stating that the line had been sanctioned by Parliament, merely meant that the whole scheme of defence had been sanctioned by Parliament, and not each work?—Yes; I find, however, that the intermediate work is mentioned in the Commissioners' Report.

2600. (*Major-General Simmons.*) In the estimate that they gave, would they not have included the estimate for that intermediate work, if it had not been already provided for?—They adopted the total estimate which was included in the Estimates of 1860-61. I do not think they went into the detail to which you refer as regards the intermediate work.

2601. Surely, according to their Report, they must have done so; for it is described in their Report as one of the defences included in the 350,000*l.*, and I presume that it was included?—I think that 350,000*l.* was for Tregantle and Scraesdon.

2602. They state that that line consisted of two forts, Tregantle and Scraesdon, and an intermediate work; and they say that it had been sanctioned by Parliament?—That is, the total estimate of 350,000*l.* was sanctioned by Parliament. If it were desirable to construct an intermediate fort,—which I think it is not,—such a work might be added. No detailed plan was made for the intermediate work.

2603. Had any detailed plan been made for Tregantle and Scraesdon at the time that the Defence Committee reported that the cost of those lines would be 350,000*l.*?—For Tregantle, but not for Screasdon.

2604. Was a detailed estimate ever made for those two forts according to the plan approved in 1860 for Tregantle and Scraesdon?—There was a detailed estimate made for Tregantle, and a lump sum contract was entered into for that work, but the contract for Scraesdon was on a schedule of prices on an estimate based upon approximate quantities.

2605. It appears that a very expensive portion of the detailed plan of Scraesdon has been omitted in construction?—Yes.

2606. I allude to an extensive range of casemates extending round three or four sides of the work?—Yes; that was omitted, after a visit of inspection I made in company with Sir George Lewis. There would have been an excess over the estimate if it had been provided.

2607. The total amount expended on those two works, with the military road connecting them, appears to be, according to the figures which have been laid before the Committee, 331,177*l.*?—The military road should not be in the estimate.

2608. (*President.*) The Defence Commissioners recommended connecting lines between those forts?—They did.

2609. Then it appears that at one time it was intended to substitute a military road?—Yes.

2610. That has now dropped out too?—It was considered to be a kind of work that might be executed at a time of expected attack, and that it was unnecessary to apply to Parliament for a sum of money specially for the purpose.

2611. With reference to Scraesdon, the attention of the Committee was called to the escarp galleries; do you consider that those galleries were necessary for the support of the wall, or was it solely on military considerations that they were adopted?—The construction of revetment you refer to was adopted because it was the most economical, and at the same time afforded advantages in regard to the defence of the ditch.

2612. They were cheaper than building a solid wall?—Yes, certainly.

North-East Defences.

2613. (*Major-General Simmons.*) At what date was the design for the North-East Defences, as now executed, approved; in what year?—I think in 1863.

2614. The estimate that was then made for it would have been, I presume, as stated in the Schedule of the Act, 350,000*l.*?—That sum did not represent originally any particular works. The estimate included by the Commission, for the North-East Defences, was 1,200,000*l.*

2615. Besides 350,000*l.* for an inner line?—Yes; but the Government considered it undesirable to incur so large an expense on the defences of Plymouth in this quarter. Lord Palmerston and Mr. Sidney Herbert, in determining what to submit to Parliament for the North-East Defences, proposed 350,000*l.*, with the view of constructing a nucleus of defence at the principal points to such an extent as that sum would permit. Then afterwards there was a discussion as to a change of the line, and the right flank and centre were thrown forward in order to avoid buying expensive land. Ultimately the present line was taken up, and the works were designed so as to be constructed within the amount of 350,000*l.*

2616. According to that design, it would appear that keeps had been intended at St. Budeaux, Ernesettle, and also a work near Knackers Knowle, called Fort Widey; were they included in the estimate of 350,000*l.*?—As I have just stated, the estimate of 350,000*l.* did not originally provide for any specific works.

2617. But in making the design so that it should not exceed 350,000*l.*, did you include the works that I have mentioned?—No; those have never been included in any estimate.

2618. The expenditure at the present time would appear to be 318,000*l.*, which shows a considerable saving?—Yes.

2619. Was it not contemplated to construct those keeps?—Never; the keeps were left to be executed hereafter, if it were at at any time thought desirable to do so.

2620. (*President.*) Any saving that has been made in that line of the North-East Defences has been applied, I apprehend, to meet the increased expenditure on Staddon Heights?—Yes.

2621. (*Major-General Simmons.*) That was authorised by the Act of 1867?—Yes.

2622. (*President.*) I believe that in the estimates given by the Defence Committee, they stated that they were very vague?—Yes; that is to say, they were framed with reference to the cost of several works of fortification previously constructed, and, as stated by the Commissioners in their Report, not on specific designs, which it was not their province to prepare, even if time had permitted their doing so.

2623. (*Major-General Simmons.*) In the estimates, as presented to Parliament in 1864, when these works were designed to occupy the ground which is now taken up, the estimates were no longer vague, but well defined at the time, and the total estimated cost was stated at 350,000*l.*?—Yes; the original sum was adhered to, and in constructing the works, every possible economy was exercised to keep the expenditure within that sum.

2624. They appear to have been designed with that view, including those works which have been since omitted?—There never was any intention on the part of the Government to construct the keeps at St. Budeaux, Ernesettle, and Widey. My own opinion is that, so far as permanent works of fortification are concerned, the line is quite strong enough without them.

2625. (*President.*) Is there any water to be got by boring, along the line of the North-East Defences?—If necessary, it might be so obtained.

2626. (*Major-General Simmons.*) Are there not sufficient springs and wells within the Lines, to supply any number of troops encamped within those works?—Yes.

2627. (*President.*) You do not apprehend that any difficulty would arise as to water?—No.

2628. Has there ever been any plan for filling up the gap between the Laira and the Staddon Position?—No design has been made, but I referred to it in my Report of 1867 as a thing that ought to be done. *Col. W. F. D. Jervois, C.B., R.E.* 17 Feb. 1869.

2629. There is no estimate for it at present?—No; but it need not be an expensive work.

2630. (*Major-General Simmons.*) When was the line recommended by the Defence Commission between Fort Staddon and Hooe Lake abandoned, and the construction of Fort Stamford decided upon?—In 1860; it was on going into the details of the design that the work called Fort Stamford was undertaken, for the purpose of closing the left of the position, and of commanding ground otherwise unseen from the works.

2631. (*President.*) Before you went to Parliament for its sanction?—No.

2632. Before your first detailed Schedule?—Yes, before the first detailed Schedule; in the first Schedule there was no detail given; merely so much for Portsmouth and so much for Plymouth, &c. It was not till discussions took place in Parliament in 1862 that a detailed schedule was given.

The witness withdrew.

Tuesday, 2nd March, 1869.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E,
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel W. F. DRUMMOND JERVOIS, C.B., R.E., further examined.

2633. (*President.*) Are you aware that we have received a letter from the War Office, stating that, in some cases, plans would be put before us which are not finally approved, and that you would explain to us the reasons for the course which is now adopted?—Yes. *Col. W. F. D. Jervois, C.B., R.E.* 2 March, 1869.

2634. Then perhaps we may begin with the Portland Breakwater. Will you state to the Committee what course it is now proposed to adopt with reference to the Portland Breakwater?—There appears to be some uncertainty with regard to the *pierre perdue* foundations. It is a question whether the foundations may not settle unequally. Time will show whether such is the case, and if it turn out to be so, it would be advisable to construct the work so as best to meet such unequal settlement. The plan which it would probably be desirable to adopt under such circumstances appears to be a turret plan, for the foundation for each turret may be separate, and be weighted with the weight of a turret and its armament before placing the turret in position.

2635. So that if one turret went down it would not affect the next?—Precisely so.

2636. I fancy the original idea was that a work similar to that at the Horse Sand Fort should be placed here?—The original plan was a masonry work.

2637. Of three tiers?—Yes; but that was in the year 1858, I think.

2638. Before the Report of the Defence Commission?—Yes.

2639. Since the Report of the Commission, has any definite plan been decided upon?—The plan that was decided upon since the Report of the Commission, was a tower with the exterior wall of iron, of two tiers of casemates, with 14 guns in the lower tier and 15 guns in the upper tier.

2640. Was it to be an iron structure?—Yes; that is, the exterior part of the structure was to be of iron.

2641. Constructed like the forts at Spithead?—Yes; constructed like the forts at Spithead, but without any turrets; there would not be space for turrets on the top.

2642. In addition to the casemated guns?—It was only proposed to have casemated guns.

2643. (*Major-General Simmons.*) At what date was that designed?—In February 1867, at the time I wrote the Report which was presented to Parliament.

2644. (*President.*) That was at the time of your first bringing before Parliament the question of iron structures?—Yes.

2645. Is it contemplated now that that plan may be reverted to if the foundations should be

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found to be sufficiently secure?—I cannot say what the views of all concerned in coming to a decision upon the point may be, but my own view is,—that as, with the amount of iron-plating which is now considered necessary, this plan of two tiers of iron-plated casemates would cost so very much more than the turret plan, or (of course) than a one-tier casemated plan,—and as, moreover, considering the position of the work, it is questionable whether a fort of very great power is wanted, —it is for consideration whether in any case the turret plan or the one tier of casemates may not suffice.

2646. Then the two-tier plan is put before us as one of two alternative plans?—The two-tier plan is now put before you as one of three alternative plans.

2647. Then we shall have to take the estimates for the two-tier plan?—The estimate for the two-tier plan is the highest estimate, the estimate for the one-tier plan is the lowest estimate; the estimate for the turret plan is intermediate between the two; the turret plan would be a little more expensive than the one-tier plan.

2648. But none of those plans will be decided upon until the state of the foundations has been proved to be satisfactory, so as to carry the weight?—That is the present intention.

2649. (*Major-General Simmons.*) When Mr. Coode was before the Committee, I understood him to say that the foundations were laid out with reference to a plan according to which the buildings would have been upon the annulus, the ring of masonry which is now constructed on the site of the fort?—It was originally intended to construct casemates on the annulus.

2650. (*President.*) With a parade in the centre? —Yes.

2651. (*Major-General Simmons.*) Was that designed with reference to a two-storied masonry building?—Yes.

2652. (*President.*) For three tiers?—The original design in 1858 was for three tiers; but the foundations were not constructed with reference to that.

2653. (*Major-General Simmons.*) But the original idea in making the annulus was to place a heavy building upon it?—Yes; but subsequently the sea made a breach in the outer wall, and there was a considerable settlement in one part of the exterior wall caused by a giving way of the foundation beneath it; it was therefore not considered safe to build the work on the annulus, and the plan approved in the beginning of 1867 provided for withdrawing it from the exterior annulus and putting it over the centre of the foundation.

2654. Do you consider that the settlement which has taken place up to the present time in that work is of such a nature as to warrant you in considering that a heavy work such as an iron structure, could not be built upon that annulus now?—After what has occurred, I should not like to undertake to put a heavy work upon the annulus.

2655. Such a work probably would not be heavier than the building for which that foundation was originally designed?—Perhaps not; but we have had experience since then with regard to the foundations, and occurrences have taken place which alter the position of the case. I should add that the original work was only for 68-pounder guns; the present work would be for the heaviest guns of the present day, and that is a reason for reducing the number.

2656. But the weight of the guns themselves appear to be a very small fraction compared with the weight of the building?—I am referring to the size of the work, and the position of the superstructure with respect to the annulus.

2657. (*President.*) Has any calculation been made of the weight per superficial foot, that would be brought upon the foundations?—Over the whole area, with the two tiers, it would be, if I recollect right, under two tons per superficial foot. I think it would be a little under 6 tons upon the piers.

2658. (*Mr. Hawkshaw.*) What piers?—I mean the piers of the work; on these parts (pointing to the plan), taking the area of supports.

2659. (*Colonel Harness.*) By the area, you mean the area of the concrete?—When I talk of the area, with regard to the two tons per foot, I mean the area of the concrete bed.

2660. (*Major-General Dickson.*) Do you mean from here to there (pointing to the plan), or the inner concrete?—The whole concrete. I am dealing with the superstructure.

2661. (*President.*) Do you consider that there is any doubt as to the foundations bearing the weight it would be necessary to put upon them, provided there is no unequal settlement?—To my mind the question is not so much the weight per foot that the *pierre perdue* foundations are capable of bearing, but the probability that there may be unequal settlement in those foundations.

2662. (*Mr. Hawkshaw.*) Below the *pierre perdue*, I suppose?—Yes, owing to there being soft clay beneath the rubble stonework; and if there were such unequal settlement, it is not improbable that a continuous work might be found to lean over on the side on which the settlement took place.

2663. (*Major-General Simmons.*) You spoke of the weight of two tons per square foot as the weight of the fort. Can you tell the Committee over what extent that calculation of two tons has been taken, and at what level?—Over a surface of about 31,000 superficial feet, taken at the level of the top of the bed of concrete.

2664. Would you tell us what you believe to be the case now?—I believe it to be that level which Mr. Hawkshaw is pointing out on the top of the concrete.

2665. (*President.*) Above the concrete bed?— Above the concrete bed and included within the perimeter of the fort.

2666. (*Mr. Hawkshaw.*) I have no doubt from the look of it that it would be about two tons to the foot on the surface of the concrete?—Yes; I think it is somewhat under two tons. I find that the exact weight is 1·37 tons per square foot, at the level I have just referred to.

2667. (*Major-General Simmons.*) Is this the precise design upon which the estimates were made in 1867?—The design in 1867 was not so detailed as that; it was however about the same diameter, and the same number of guns, but the cost of the ironwork is now estimated very much higher, owing to its having been generally considered that greater strength was required, than was intended to be provided when the estimates of 1867 were framed.

2668. Is the plan and estimate the same now, except as regards the iron, as it was in 1867? —It is the same, except as regards the iron and some minor details, including the position of the lighthouse.

2669. I understood you, when you introduced

this plan, as saying that this was the plan upon which the estimates of 1867 had been framed?—That is, the plan you are referring to is designed for a work of two tiers of iron-plated casemates, as proposed in 1867, and to carry the same number of guns as then proposed.

2670. What is the number of guns?—29 was the number of guns proposed in 1867, and that is the number in the plan before you.

2671. (*President.*) The exterior wall of iron was 15 inches thick then; have you now increased that very much?—Yes, it is now proposed to be of an average thickness of 24 inches, between the piers. The thickness in front of the piers will not be so much.

2672. One of the alternative plans that you propose is for four turrets?—Yes.

2673. You have stated that a great increase has been given to the thickness of the iron in the casemated plans; has the thickness of the iron in the turrets in like manner been increased since 1867?—The present estimate for the turrets is double what was stated in 1867.

2674. What was the estimate for turrets in 1867?—The cost of a turret was then put down at 10,000*l.*, but the subsequent working out of a design for a turret leads me now to state the probable cost approximately at 20,000*l.*

2675. Was it only 10,000*l.* in 1867?—That is all. You will find that 27 turrets were then estimated for at 270,000*l.*, that is 10,000*l.* a piece.

2676. Do you consider that as far as you can judge now 20,000*l* each will provide the turrets?—Yes.

2677. (*Major-General Simmons.*) Is the turret the minimum plan?—No; the minimum plan for the Portland Breakwater Fort is the one-tier plan; the turret plan is rather dearer than the one-tiered plan. The perimeter of the four turrets together is greater than that of the perimeter of the exterior of the casemated work.

2678. (*President.*) The turrets in that case, I suppose, would be quite independent of the outer wall?—Quite independent of the outer wall.

2679. (*Major-General Simmons.*) They seem to rest upon it here?—No, they have a separate base here (pointing to the plan). Each turret rests upon a detached mass of masonry, as shown upon these plans.

2680. And are the racers entirely laid on that mass of masonry?—The racers rest upon that masonry, as you see there and there.

2681. (*Mr. Hawkshaw.*) What is the weight of the fort with a single tier of guns, upon the surface of the concrete?—It is a little over one ton per foot superficial.

2682. And the other two works?—The exact weight is, in the case of the two-tiered work, 1·37, and in that of the single tier 1·1 tons per foot superficial, taking the weights at the top surface of the concrete.

2683. (*Major-General Simmons.*) What would be the weight of this turret structure; have you worked that out too?—I think it is also under two tons per foot superficial. I find the exact weight, taken at the level of the top of the concrete, is 1·49 tons per foot superficial.

2684. That is heavier than the one-tier?—Yes, but then it has the advantage of each part being separate.

2685. (*President.*) But you consider that the bed of concrete will distribute the weight over the whole?—The bed of concrete will distribute the weight, and so be a good foundation for the casemates that are between and behind the turrets.

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2686. (*Mr. Hawkshaw.*) These turrets bring the weight much nearer the margin of the foundation than the single tier plan does?—The part that you are referring to is only a covering mass.

2687. (*Major-General Simmons.*) But still it is weight?—Yes; but it is weight in which the stability of the structure of the fort itself does not depend.

2688. Will you supply to the Committee statements showing the weights of each of these proposed structures, the two-tiered, the one-tiered, and the turret structure upon these foundations, as delivered over to you by the Admiralty Engineer?—Yes.

2689. And will you accompany it with an outline sketch showing the line of work as handed over by Mr. Coode?—Yes.

2690. I see in one of these plans a provision for torpedo wires?—Yes.

2691. There is apparently no protection for the wires below low water mark; is it intended to protect them in any way?—We should have an arrangement to prevent the wires from being injured by the *pierre perdue*, and to protect them from shot between high and low water mark.

2692. (*President.*) What part of the bay is it intended to protect by "torpedoes" from the fort?—Between the Nothe and the Breakwater Forts.

2693. Would you close the whole of the 4,000 yards?—The distance is about 3,500 yards, and torpedoes should be placed chequerwise between the forts, but many would be worked from the shore.

2694. (*Major-General Simmons.*) What number of wires do you calculate upon bringing in for the defence of this roadstead?—Supposing the wires to be arranged without a thick coating round them, you could bring in, of course, a great number more than you otherwise could.

2695. But as the number will depend upon the extent of the roadstead and the channel to be protected, it would appear that that number should be determined before considering the area of the opening?—I am going into the question of the details of the openings for torpedoes, and we are about to try an experiment at Chatham for this object.

2696. (*President.*) I presume that before the details of the cut for the torpedo wires are settled, the question will be carefully considered as to the number of wires which it would be necessary to have?—Certainly.

2697. (*Major-General Simmons.*) Could you not work torpedoes from the land near Weymouth very well?—Yes.

2698. (*President.*) We will now go to the Spithead forts. With reference to the Horse Sand and No Man's Land Forts, do you propose to place before the Committee any plans for those forts?—The plans I have already laid before the Committee are those which are now being carried out.

2699. (*Major-General Simmons.*) Is that the plan of the Horse Sand Fort upon which it was intended to complete the work at the time of your report of February 1867?—Yes, as nearly as possible.

2700. (*President.*) With an increased thickness of iron?—Yes.

2701. (*Major-General Simmons.*) How many

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guns was that to mount?—49 in the casemates, 24 in the lower tier, 25 in the upper tier, and provision is being made for adding hereafter 10 in turrets.

2702. (*President.*) The cost of the turrets is not included in the estimates laid before us, I believe?—No; the cost of the turrets has never been included yet in any estimate presented to Parliament, but the cost of the preparations for their reception has been included in the estimates.

2703. (*Major-General Simmons.*) In your Report of 1867 it was stated that there were intended to be 55 guns in casemates, it has now been reduced to 49?—We put the guns further apart in the later plans to give more room for working the guns. The perimeter of the work is the same as was then proposed.

2704. (*President.*) The great increase in the estimate is entirely due to the increased strength given to the iron superstructure, is it not?—Yes.

2705. (*Major-General Simmons.*) What was the design upon which the estimate in 1865 of 260,000*l.* for this fort was based?—It was a design of two tiers; but at that time we had not any detailed plan made. We were not then in a position to make detailed drawings for the superstructure of these works.

2706. Was it intended at that time to construct it as a masonry fort, with iron shields, or an iron fort?—It was intended to be an iron fort.

2707. (*President.*) Was that in 1862?—In 1865.

2708. (*Major-General Simmons.*) Then the change of plan from the design of 1865 to the designs which are now being carried out has not caused any alterations in the foundations?—It has caused no alterations in the foundations.

2709. Then there has been no increase in the estimates consequent upon that change?—No increase as regards the foundations. There has been a great deal of increase since 1865, consequent upon covering over the whole of the interior with a mass of concrete, to receive that portion of the structure which is within the masonry annulus, and owing to improvements in many of the arrangements of the work.

2710. (*Major-General Dickson.*) In torpedoes?—Provision for applying torpedoes has also been made, and the designs for the magazines, as well as all the accessories of various kinds, have been greatly improved since 1865.

2711. (*President.*) Has the adoption of the heavier guns led to a very considerable increase in the arrangements below for magazines?—It has led to a considerable increase. The improved arrangements for magazines, shell stores, lighting passages, and, indeed, all the accessories for the service of the guns, have considerably increased the cost of these works.

2712. (*Major-General Simmons.*) Is the rearrangement of the magazines so much caused by the increased weight of the guns, as by altered ideas as to the means necessary for securing the powder in magazines?—It has been caused by both. The storage for ammunition had to be increased, owing to the increased size of the guns; additional facilities are moreover required for raising heavy weights to the guns, both as regards the powder and the missile; it has also been considered necessary to introduce special arrangements with regard to the lighting of magazines.

2713. These arrangements for lighting the magazines are independent of the weight of the guns, are they not?—Yes.

2714. And would not that be the greater part of the expense in the alterations?—No; not the lighting of the magazines. As I have stated in previous evidence,—formerly we used to have one main magazine, and smaller expense magazines in a work. Now almost every part of the basement is converted into magazines either for shells or for powder; then there are lifts connected with each, and various other details, all of which tend to increase the expense.

2715. (*Major-General Dickson.*) No Man's Land Fort is exactly the same, I suppose?—Yes.

2716. (*Major-General Simmons.*) In the return of expenditure on account of these forts—Horse Sand and No Man's Land—an item is included for "Proportion of Expenses of Experiments at Shoeburyness." Is that fairly chargeable against these forts, or should it not be charged against the separate item in the estimates presented to Parliament of 165,000*l.* for incidental expenses (works and experiments)?—I think it is a fair charge upon the work. That item of 165,000*l.*, which includes, amongst other things, "experiments," was not intended to include large experiments like those you are referring to, which involve the construction of large casemated experimental structures, and which are very costly.

2717. For instance, would not the Plymouth Casemate experiment come out of that item for experiments, because that is a large item in itself, 165,000*l.*?—No; the Secretary of State, when it was submitted to him, specially approved of its being charged to the Spithead Forts, for the experiment bore directly upon the details of the iron construction of these works. The item of 165,000*l.* would not bear it; in fact, if we had charged it to that, we should have committed an illegal act.

2718. (*Mr. Hawkshaw.*) Do you mean that the expense of the Plymouth Breakwater Fort was charged against the Spithead Forts, and not the Plymouth Forts?—It was done with a view to the construction of the Spithead Forts.

2719. As well as the Plymouth Fort?—The Plymouth Fort had already been designed, and was in course of construction; then we made the further experiment before undertaking the Spithead Forts. No doubt, the experiment on a section representing the Plymouth Fort was undertaken with reference to questions that were asked in Parliament, but as I before stated, the experiment bore directly upon the details of construction of the iron walls of the Spithead Forts. No authority except Parliament could have given us the power of exceeding any one of our estimates; so that it was impossible to charge the cost of so large an experimental structure to the 165,000*l.* provided for miscellaneous services without, as I said before, committing an illegal act.

2720. (*President.*) The Plymouth Fort has been or is to be considerably increased in strength in consequence of that experiment, is it not?—Yes.

2721. Would it not be fair to charge a part of that expense against the Plymouth Fort as well as against the Spithead Forts?—If that were done, it would be difficult to apportion the precise amount to each; and there would be no difference in the total amount submitted to Parliament.

2722. (*Major-General Simmons.*) Is the whole item of 165,000*l.* expended?—No; but we are running it very close. The maintenance of the

staff employed upon the Loan works depends upon that item, and we shall have to increase it in the Bill which it will be necessary to bring forward this year.

2723. (*Colonel Harness.*) It is not an item for experiments only?—No; it is mainly for the staff employed upon the Loan, and the experiments form but a very small portion of it.

2724. (*Major-General Simmons.*) Then is it probable that if any further experiments have to be made, they will have to be charged against the contingencies on some of these forts?—The experiments that we shall make hereafter will be comparatively small in extent and of an inexpensive character; most probably they would be chargeable to the item for miscellaneous expenditure when increased.

2725. If future experiments have to be charged against the forts, we should have to see that the contingent item is ample in the estimates for these forts?—Certainly.

2726. (*President.*) I understand you to say that it is intended to make ample provision for the charge for incidental expenses in the new Act?—Yes; and then the miscellaneous item would suffice to cover the cost of any small experimental services which may be properly chargeable to it.

2727. Should that plan not be adopted, I presume it would be necessary to increase the estimates for the works to some extent to provide for those experiments?—If that plan was not adopted, it would probably be necessary to increase some of the estimates to a small extent; but experiments of a general nature, which have reference to works not only provided for under the Loan, but also to works both abroad and at home provided for in the Annual Estimates, would be charged to the ordinary experimental vote (Vote 17 in the Army Estimates).

2728. (*Major-General Simmons.*) Did the sum taken as additional to what had been included in the estimates for the year 1865, and as required for iron-plated constructions, include the iron-casing of the granite walls of the forts at Portsmouth—the Horse Sand and the No Man's Land Forts?—The iron-plating of the basement has never been included in any estimate. I think it is so stated in my Report. We have so arranged the masonry of the work, that we may put on the iron casing hereafter, should it be desired to do so. I may add that, in my own opinion, it is not likely that it will be wanted.

2729. (*President.*) With reference to the St. Helen's Fort, it was originally contemplated to have a fort upon the point at St. Helen's?—Yes.

2730. And it was afterwards determined to have the work on the edge of the sand?—Yes.

2731. And the estimate in 1867 for that and the Puckpool Fort together was increased from 87,000*l.* to 145,000*l.*?—Yes.

2732. Was that 145,000*l.* for providing the iron superstructure, or for granite; or was it for providing a fort, such as it is now intended to build, partly of iron and partly of granite?—The 145,000*l.* provided for a fort such as it is now intended to build, partly of iron and partly of granite. The part to seaward is to be protected by iron.

2733. Did that 145,000*l.* include also the shields for the four guns in the granite?—No; the 145,000*l.* was intended to provide for the whole of the St. Helen's work, irrespective of two turrets and four shields.

2734. And for the shields in Puckpool?—Puckpool is, as you are aware, mainly a great mortar battery; at that time there were no shields intended at Puckpool. It was then only intended to have five light guns, bearing on the beach on either side; and subsequently, when we abandoned the idea of going on with the Ryde Sand Fort, it was proposed to mount some guns of 25 tons weight behind iron shields in Puckpool Battery.

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2735. That was in 1868, I think?—Either in 1867 or 1868.

2736. (*Major-General Simmons.*) The item in the Act of 1865 for Spit Bank and other Spit works stood at 310,000*l.*; what was the change of plan which caused its reduction in 1867 to 293,000*l.*?—We had not any detailed plans for the superstructures of the Spithead Forts in 1865, and in 1867 we had gone more into the details of the question.

2737. At the date of the estimate of 1867 it would appear that the sum of 293,000*l.* was intended to provide a work on the Ryde Sand, as well as on the Spit Bank; how much of that sum was the estimate for each work?—171,000*l.* was for the Spit Bank, and the remainder for the Ryde Sand. I should observe that the number of casemates in the Spit Bank Fort now proposed to be wholly iron-plated is less than was estimated for in 1865.

2738. (*Colonel Harness.*) The Ryde Sand work took the place of the Sturbridge; what was the amount of the estimate for the Sturbridge Fort?—No, the Ryde Sand and the Spit Bank Forts together were to take the place of the Sturbridge.

2739. (*President.*) Was not the same sum as was allowed for the Sturbridge work retained in the Schedule of the Act for providing for these works?—Yes.

2740. (*Major-General Simmons.*) That was 310,000*l.*, and that was reduced in 1867 to 293,000*l.*?—In 1867 we had gone further into the matter—more into detail than we had previously.

2741. Were these estimates made in detail in 1867?—In 1867 the estimates for the foundations were in detail. The estimates for the superstructures was taken at so much per casemate; they were made in considerable detail.

2742. In 1867 the design for the Spit Bank appears to have been for 17 guns in casemates, which is now reduced to 15?—We put the guns further apart, as in the Horse Sand and No Man's Land Forts.

2743. And in 1867 there were 13 guns to seaward; and now there are only nine?—That is merely owing to a different spacing of the perimeter; the space covered by the work is the same; the difference is that the number of embrasures is reduced.

2744. When was the abandonment of the Ryde Sand Fort decided upon?—In 1868.

2745. Could you supply the estimates of these two works: that is to say, divide the sum of 293,000*l.* between the Spit Bank and the Ryde Sand works?—As I stated in reply to a previous question, 171,300*l.* was for the Spit Bank, and the remainder for the Ryde Sand.

2746. In the estimates which were made in 1867, is the iron separate from the masonry, or is it in such detail that their cost could be distinguished?—No, the iron was not separate from the masonry. The superstructure was taken at so much per casemate, including iron.

2747. So that it could not well be ascertained what has been the percentage of increase due to

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the increased thickness given to the iron since 1867?—The increase in consequence of additional strength at Plymouth Breakwater is in round numbers about as 50 to 70, and the increase in cost of ironwork at Spithead would probably be in about the same ratio.

2748. But you have not got the actual estimates on which one could calculate it with regard to the Portsmouth forts?—No, the iron and the masonry were not shown separately in 1867.

2749. (*President.*) Would that same proportion apply to the shields?—No; the ratio of increase would be greater in the case of shields; because they occupy the part of the work about the gun, which is proportionally more expensive than the other part of the ironwork.

2750. Then the cost of shields would be increased to a greater degree?—Yes.

2751. With reference to this plan of the mortar battery at Gilkicker which has been laid before us, was there any provision made for a mortar battery in that estimate of 1867 of 58,000*l.*?—No.

2752. It was not included in that estimate?—No, there was a proposal to place mortars here, but there was no distinct plan. I have inserted a sum in the estimate which has been laid before you for placing those mortars in position.

2753. Then this would be an increase on the estimate of 1867 altogether?—Yes, this is an increase on the estimate of 1867.

2754. (*Major-General Simmons.*) Was not this mortar battery provided for in the original estimates, after the Defence Commission reported and recommended it?—No; it was not originally proposed by the Defence Commission; it was an after proposal to place mortars at Southsea, at Puckpool, and at this point (pointing to the plans), Fort Monckton.

2755. The Commissioners recommended an extension and strengthening of the batteries of Gilkicker, and adding nine guns. When was that extension abandoned and the new work at Gilkicker substituted?—It was in 1863. It was found impossible to make any satisfactory plan for extending the old Gilkicker Battery, and therefore a new work was provided capable of mounting about the same number of guns in casemates, as would have been contained in the old battery and the extension together. Five heavy guns may also be mounted on the roof of the casemates.

2756. Then was the 50,000*l.* that was taken in the Schedule of 1862 for the extension of the batteries, and not for new work?—The 50,000*l.* was for the new work.

2757. It was previous to the abandonment of the Sturbridge Fort, was it not?—Yes.

2758. Then the 50,000*l.* was intended to provide for the new work?—Yes.

2759. Is this plan with the mortars in the line much the same plan as that at Puckpool?—The arrangements for the battery are designed on the same principle.

2760. But the parapets are not the same thickness, are they; is there a ditch here and a glacis?—There is a ditch and glacis at Puckpool, but then Puckpool stands by itself; this is merely a line connecting the new fort at Gilkicker with Fort Monckton.

2761. Then with reference to the foreshore, do you apprehend that there will be any necessity to carry the sea-wall along to protect it; the sea wall seems to end here, and here comes the beach (describing it upon the plan)?—I do not think that the action of the sea causes that part to wear away. I think the beach has a tendency rather to increase at that point; but supposing it does wear away, the circumstance does not affect any portion of the battery; it only affects the small covering screen between the battery and Fort Monckton, and that communication might be retired more inland if necessary.

2762. Does the estimate laid before us of 8,800*l.* include anything for the beach?—It does not include anything for a sea-wall, or other means for protecting the beach.

2763. Is there full provision of magazines for this battery distinct from the masonry battery?—Yes, there are all these magazines (pointing them out on the plan); this shows the masonry, and this the traverses between the mortars.

2764. (*President.*) These will be like expense magazines, I presume?—Yes, and there is magazine accommodation in Fort Monckton for any replenishing of these that may be necessary.

2765. (*Major-General Simmons.*) Therefore these are merely expense magazines?—Yes; for the supply of the mortars bearing upon ships attempting to take up a position, with a view of firing into the harbour and naval establishments.

2766. (*President.*) From ships firing from Stokes Bay?—No; from Spithead.

2767. (*Major-General Simmons.*) When the Committee were at Gilkicker, witnessing the experiment which took place the other day, some work had just been commenced, breaking through from the rear into the shell passage, for the purposes of lighting: do you think that work absolutely necessary?—I have never myself been a great advocate for these very nice measures with regard to magazines, but they were considered necessary by the Artillery authorities, and the balance of opinion was in favour of them, and so they were provided.

2768. Do you think there is any more danger in carrying a light along a shell passage than in running a heavy shell along it on a truck with iron wheels?—I remember an answer given to me by a Captain of Engineers in the United States when I asked him how he lighted his magazines. He said:—"We take in a lamp to be sure." When I mentioned to him how particular some of our authorities were in the matter, he did not seem to apprehend the idea of its being necessary to take such great precautions. I may say for myself that I think the American carried his views rather to one extreme, and perhaps our authorities carry their views to the other extreme. It is, however, very difficult to maintain that too great precautions can be taken when dealing with the large quantities of powder now required for the service of guns in sea batteries.

2769. (*President.*) Have any instructions yet been given for cutting through the wall of the shell passage so as to carry in the lights from outside?—Yes.

2770. (*Major-General Simmons.*) It was being done when we were there, one or two had been cut through?—I think so. Referring to my former evidence with regard to having submitted these accessories for batteries to the four principal Artillery authorities, General St. George, General Taylor, General Gambier, and Brigadier-General Lefroy, I find on looking at the minute that was then passed that they specially commended the arrangements which were proposed for lighting the magazines.

2771. Were any estimates submitted to those officers, at the time, of the probable expense that would be incurred in carrying out those arrangements in all the works that had to be modified or altered to suit them?—No, that would not be a point which those officers would go into. The arrangements had been previously discussed, if I recollect right, on the Fortification Committee; I mean the arrangements for lighting, and for magazines generally.

2772. Surely the adoption of a system of that character which would involve a very large expenditure would in some measure depend upon the probable cost of its adoption?—The view was that the arrangements for security against accident were of primary consideration.

2773. In fact, irrespective of cost?—Irrespective of cost, so far as they were necessary to provide the degree of security against accident which was considered essential.

2774. (*Colonel Elwyn.*) Did the arrangements which the Artillery authorities required to be made for the magazines apply also to the shell stores?—Yes, they applied to the specific plans which you have seen carried out.

2775. You say that the Artillery authorities were very particular in their requirements for securing the magazines?—Yes.

2776. And you accordingly drew out that plan?—Yes.

2777. But did they also require those same special arrangements to be made for the shell magazines. You include the shell magazines, but did they require that to be done?—The plan laid before the Artillery authorities specially provided for lighting the shell magazines as well as the powder magazines.

2778. In addition to securing the magazine, you have of your own accord put in an arrangement for the shell magazines?—No, the lighting of the shell magazines was part of the general scheme.

2779. That was laid before them?—Yes, but it may be observed that the shell magazines might be used for powder.

2780. (*Major-General Simmons.*) At Gilkicker Battery a brickwork parados has been placed for the protection of the guns on the top, which is about 8 feet thick; do you think that that would be an adequate parados to resist the projectiles of the present day?—It would not resist a direct shot from one of the powerful guns of the present day, but it would afford a screen against splinters.

2781. But if not sufficient to resist, would it not be likely to cause serious loss amongst the gun detachments if it were struck by a shot?—It affords a certain amount of protection against splinters, and is scarcely liable to be struck by a direct shot. On the whole, I would rather be with the brick wall than without it. You will observe that it is a very short piece, and, at all events, it affords the means of attaching an iron plate for the protection of the guns against reverse fire, should it be at any time considered necessary to go to the expense of doing so.

2782. Would it not also have the effect, in case of a direct shot coming in at the port-hole, of seriously inconveniencing the detachment, much more than if it were not there?—I think if a shot came in at the port-hole, it would most likely strike the gun, and that, in that respect, the existence of the wall would not make any difference. As regards reverse fire, however, I think the gunners would work with more security with the wall to shelter them from splinters.

2783. (*President.*) Then we come to Southsea Castle. It is intended to have four mortars, is it not, behind the castle?—Yes.

2784. Will that involve any additional expenditure?—No; that is included in the sum given in the estimate.

2785. It is provided for?—Yes.

2786. (*Major-General Simmons.*) In the Report of 1867 it was stated that preparation had been made for the reception of iron shields and three heavy guns, firing through iron shields, on the castle: is it now intended to place those guns on the castle?—No; there has never been any detail sanctioned, and it is not included in the estimate that has been given in to the Committee, —nor is it included in the plan.

2787. (*President.*) It has never been included in the estimates?—It has never been included in any estimate.

2788. (*Major-General Simmons.*) How many guns was it intended to protect by iron-shields at Southsea?—23, I think; 22 12-ton and one 23-ton gun. It was only intended to provide shields for those guns exposed to direct fire, or nearly direct fire.

2789. For those which looked more directly towards the deep-water channel?—Yes.

2790. (*President.*) It looks as if it was intended for 30 guns originally. The amount is 30,000*l.*?—I think the amount is 35,000*l.* The work was designed for 31 guns, and has been carried out accordingly. A 23-ton gun has since been added.

2791. (*Major-General Dickson.*) Then these nine guns (pointing to the plan) were unprotected?—The nine guns looking up the harbour, and those which fire along the beach to the eastward were not proposed to be protected by iron shields.

2792. (*President.*) Those are the four mortars (pointing to another plan). Is that a good position for them to fire, when they cannot see anything they are firing at?—So long as the direction of the object to be fired at can be ascertained, it is not necessary to *see* the object from a mortar battery. The mortars are laid by marks lined on the object.

2793. (*Colonel Elwyn.*) But is not the old castle somewhat in the way of their fire?—No, the mortars would fire over the castle.

2794. (*President.*) But if the plan which has been suggested of having three heavy guns on the top of the castle is adopted, would it be possible to work four more mortars there?—Not at the same time, nor would it be necessary to do so.

2795. (*Major-General Simmons.*) Do you propose only four mortars in the Southsea Batteries?—It was proposed to place four more in the old castle.

2796. Would it not be worthy of consideration whether they might not just as well be placed outside the battery, altogether behind the sea-wall?—Then you get into difficulties in occupying ground, which is either parade ground or ground which the inhabitants are accustomed to use for promenade purposes.

2797. It appeared to me that there would be a great deal of difficulty in taking up the direction of shipping from that mortar battery?—You would get a line; that is all you want.

2798. As a ship moves, it would be very difficult to get the line brought into the mortar battery?—The mortars are intended to act against ships in position, not against moving ships. One of the reasons for putting them inside is that you

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have your magazine arrangements and all your accessories for batteries there.

2799. (*Colonel Harness.*) Are you satisfied with the thickness which has been proposed to be given for the protection of the expense magazines on the terreplein where exposed to oblique fire?—I should like to look at the cross section. I think we ought to strengthen some of them, and others not capable of being fully strengthened might be otherwise appropriated and turned to good account.

2800. (*Major-General Simmons.*) If you did not appropriate them as expense magazines, how would you get your powder or ammunition?—We should have to construct a small expense magazine in the rear.

2801. (*Colonel Harness.*) Could you get expense magazines under them?—I think it would be easier to provide them behind the terreplein. There would be great difficulty in placing them under the present traverses, the floors of which are only about 6 feet above high tides.

2802. (*President.*) It would stand two feet above the parapet?—Yes, if added to on the top.

2803. Will you have that case considered, and give us a plan and an estimate of what may be required to remedy the defect?—Yes.

2804. (*Major-General Simmons.*) Is there any expense magazine to be constructed for the mortar battery?—There is one in connection with the the cartridge-filling room.

2805. Have they actually been constructed?—No; they have not been constructed.

2806. Then it is not too late, as far as that is concerned, to modify that design?—The mortar platforms may be placed anywhere about the work that may be considered advisable. We are not committed to the position shown on plan.

(*Adjourned till to-morrow, at half-past* 11 *o'clock.*)

Wednesday, 3rd March, 1869.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.
JOHN HAWKSHAW, Esq., C.E., F.R.S.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Colonel W. F. DRUMMOND JERVOIS, C.B., R.E., further examined.

HURST CASTLE.

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2807. (*President.*) We now come to Hurst Castle; this is a battery of 61 casemates of granite with iron shields?—Yes.

2808. The Defence Commission, I see, reported that 31 guns should be added to that fort at Hurst Castle?—Yes; but on going further into the question, before drawing out the design, it was considered desirable to provide a much greater quantity of casemated fire, with a view of absolutely closing the Needles Passage against hostile vessels.

2809. Therefore the work as executed is much greater than was contemplated by that Commission?—Yes, it was done with a view of having at Hurst Castle a battery that, in conjunction with other means for the defence of the passage, no ship could think of passing; so as to render us more independent there of floating defences, and so enable us to apply whatever floating defences we may have at Portsmouth, more especially in connection with the works at Spithead.

2810. With reference to the supply of ammunition to those 61 guns, at present there are, I think, seven expense magazines, so that each magazine would have to supply from eight to nine guns; do you consider that in a hot action that would be a sufficient number of expense magazines?—I do not think it would be sufficient for keeping up a continuous fire from all the guns, but it would probably suffice for absolute requirements in action; all the guns would be loaded at first, and would be fired in tens, or twenties, at a ship, and then the available force in the work would load and fire as many as could be maintained in continuous action.

2811. But would it not be desirable to make some simple and inexpensive arrangement for storing the shells, so as to be able to appropriate the whole of these expense chambers to the powder?—It might be done.

2812. So as to increase the supply of powder?—The arrangement would be more perfect with additional shell stores in rear.

2813. But without having additional shell stores, probably a sufficient quantity of shells might be protected from the weather in a position where they might be supplied from the main shell stores, and where they would be perfectly safe behind the piers from any direct fire; might not some inexpensive arrangement of that kind be adopted?—Some such arrangement might no doubt be adopted with a view of adding to the extent of the shell stores.

2814. And adding to the powder stores?—Yes. The work was first designed with the old ideas as regards expense magazines, and those shown in the plan before you were afterwards added. The "first subsequent" plan (if I may use the expression) provided for a continuous line of magazines on the roof, and for letting the ammunition down to the guns, but when I came to go into the details of that design, I found that the weights over the groined arches would be so great that I doubted the stability of the construction, so we had recourse to the present plan of putting expense magazines in rear, and treating the work much in the same way as the Southsea Batteries are treated, with expense magazines and shell stores at intervals.

2815. (*Major-General Simmons.*) Then you see no objection to the arrangement which has just been spoken of, of converting the whole of the ex-

pense shell stores into expense powder magazines, so that the guns may be served in the proportion of about four guns to one powder magazine?—No; I think it would be an improvement.

2816. (*President.*) With reference to the magazine in the keep, we found there that the floor was just the same as in other places, very much affected by dry rot. Is there any idea of substituting any other floor for the wooden floors?—We are considering generally the substitution of asphalte for floors, in such cases, in place of wooden floors, and covering them with kamptulicon.

2817. (*Major-General Simmons.*) Would any covering of that sort be necessary?—It is a question whether whitewashing the asphalte might not suffice.

2818. Because kamptulicon itself is very apt to rot; that is my experience of it?—The proposal to use kamptulicon is only one amongst other proposals.

2819. (*Major-General Dickson.*) If the asphalte was made of some material which had no grit in it that would be desirable?—The worst of asphalte alone in the interior of a magazine is that condensation takes place upon it..

2820. (*President.*) The subject is under consideration?—Yes.

2821. (*Major-General Simmons.*) In the plans which we saw there were additions about to be made in the basement floor in preparation for guns on the Moncrieff system; will those be carried on at present?—They will be carried up to the level of the top of the surface of the casemates; it is intended to execute everything shown in the plan except the proposed rampart covering the guns mounted on the Moncrieff principle, which as yet is not decided upon for the larger natures of guns.

2822. (*President.*) There are two ideas, one for three turrets, and the other for four Moncrieff guns; the estimated cost of completion is now 22,989*l.*, but that does not include, I apprehend, any sum for making preparation either for the turrets or for the Moncrieff's?—No; excepting up to the level which I just now spoke of. The estimate includes the masonry preparation for the reception of the guns mounted on Moncrieff's principle.

2823. (*Major-General Simmons.*) In fact, it includes all the work within the casemate itself?—Yes; except as regards any modification that it might be necessary to adopt in the event of turrets being added, instead of guns mounted on Moncrieff carriages.

2824. (*Colonel Elwyn.*) All that is necessary to bear the weight of the turret will be put in, and it will be put up?—Yes.

2825. (*President.*) But you propose only three turrets and four Moncrieff's, so that the position would not be the same?—Three of the Moncrieff spaces occupy the same position as three of the turrets would.

2826. (*Major-General Simmons.*) Which are those three?—(The witness pointed them out).

2827. Then you drop out the centre one on the western face?—This (pointing to the plan) would be an additional gun mounted on the Moncrieff principle.

2828. I have been under the impression that the whole of what was to be done for the Moncrieff's was included in the 7,406*l.*?—Yes, in the separate amount for the Moncrieff guns mounted on Moncrieff's principles.

2829. There is no provision whatever for the turrets?—No; and there never has been any provision for the turrets.

2830. As the question is not yet decided whether there should be four Moncrieff guns, or three turrets, I presume that the work having been brought up to the level of the roof of the casemates, and covered with asphalte, nothing more will be done until that question is decided?—No.

2831. Then a provision is made in the estimates of 7,406*l.* for the four Moncrieff guns if they should be decided upon?—Yes.

2832. If the turrets had to be constructed, would it not involve the construction of magazines similar to those which are required for the Moncrieff's in rear?—Very similar.

2833. And that, therefore, would have to be added to the cost of the ironwork of the turret?—No; whatever modification of the magazines might be necessary would be provided for in the sum required for the turrets.

2834. (*President.*) Does the 20,000*l.* for each turret include preparation?—Yes, it includes preparation; there is 5,000*l.* for the setting up and the ironwork connected with the turret, and 15,000*l.* for the turret itself.

2835. I wish to call your attention to a point which appears in Colonel Hadden's evidence. He stated that the original contractor complained at the termination of his first contract of the great losses that he had sustained, and that it was arranged by the Government to give him 15 per cent. increase upon his original schedule of prices for any work that might be performed beyond the sum of 68,000*l.*, which was the amount of the first contract. Was the additional work, which appears to have amounted to nearly 30,000*l.*, done by tender, or was it simply under a new arrangement with the same contractor?—It was under a new arrangement with the same contractor.

2836. There was no second tender called for?—No second tender was called for; there was no object in doing so, nor would it have been practicable; the contractor had all his plant upon the spot, and all his arrangements made for carrying on the work. The work occupied much longer in execution than was originally expected; in the meantime prices of labour and materials rose; therefore it was fair to the contractor to allow him a percentage on his original prices.

2837. Then, as I understand it, the 15 per cent. was given to him as a fair increase consequent upon the rise of prices, but not to compensate him for any loss he might have sustained through having put in too low a tender in the first instance?—The 15 per cent. was allowed as a fair increase for the work remaining to be done in consequence of the rise of prices, and was in no way given as compensation for any losses the contractor may have sustained, owing to the amount of his actual contract having been too low. With regard to the shields at Hurst Castle, to which you were referring, there is an additional expense for them beyond what is required for other one-tiered casemated works, owing to a plan having been adopted for applying iron to the arch over the shield.

2838. (*President.*) What was the object of that additional iron?—The object of that additional iron is to strengthen the arch over the shield.

2839. (*Major-General Simmons.*) To what height does it go; do you remember the dimensions of it?—3 feet.

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2840. What then would be the height of the shield?—8 feet.

2841. Eight feet instead of 6?—Eight feet is the height of the shield, and 3 feet the height of the iron covering of the arch.

2842. (*President.*) What was the amount of the additional expense caused by that?—I have put it down at 150*l.*

2843. For each shield?—For each shield.

2844. Will the plate rest upon the granite, or will there be anything interposed between it and the granite?—We should interpose iron concrete, or other material.

2845. What thickness would you propose that that should be?—About 6 inches.

[The witness explained the intended mode of constructing the arch.]

2846. (*Major-General Simmons.*) When at Hurst Castle, I was informed that the holes which you have described as having been pierced in the voussoirs of the flat arch over the opening for the iron shields were made for the purpose of driving dowels in order to strengthen that arch; is that the case?—No, these holes were provided for bolts, to bolt the plate to the front of the arch; there will also be an iron skin behind the arch. The provision of the iron and the bolt-holes for fixing it formed part of the original plan. The bolts will form dowels, but that was not the intention of them.

2847. (*Colonel Elwyn.*) The intention of them was for securing the iron plate, was not it?—Exactly.

2848. (*Major-General Simmons.*) What is the size of the shields here?—12 by 8.

2849. What size do you generally make them now elsewhere?—12 by 8.

2850. The last constructions?—Yes; all 12 by 8. The arched ones are 12 by 8 on the average.

2851. Is the 12 by 8 at Hurst Castle exclusive of the iron facing to the arches?—Yes.

2852. (*President.*) Then we come to the Isle of Wight—the Needles Battery. We are informed that it is proposed to replace the 7-inch breech-loading guns there with heavier guns?—Yes.

2853. Will those be 9-inch guns, or what?—The intention is that they shall be partly 9-inch 12-ton guns, and partly 7-inch 7-ton guns.

2854. (*Major-General Simmons.*) The Hatherwood and Warden Point Forts were originally designed each to contain barracks for two officers and 50 men, I believe. When was it decided to omit these barracks?—At the time the works were undertaken. The adjacent work at Golden Hill contains barrack accommodation, which was considered to suffice.

2855. (*President.*) That was the recommendation of the Commissioners?—Yes.

2856. (*Major-General Simmons.*) But the distance of Golden Hill from those batteries is rather great, considering that those batteries, if they were brought into action at all, would have to come into action quickly?—That was however the original intention of the Commission.

2857. (*Major-General Simmons.*) But according to the approved plans of 1861, which are now in the room, it would appear that it was intended that those barracks should be supplemental to the barrack designed for Golden Hill, and that that barrack was not in substitution for them?—There is nothing to prevent those barracks being added at any time, should it be thought necessary. The barrack at Warden Point would be in connection with the gorge wall, already built, and the barrack at Hatherwood would be entirely separate from the battery. Moreover, if it were necessary, men might be placed in tents pitched close to and behind the batteries.

2858. Was it upon the Queen's plans, approved in 1861, that the estimates presented to Parliament in 1862 were framed?—No; the plans you refer to were not intended for that purpose.

2859. When was the plan for Golden Hill, which was approved in 1861, modified, and the plan upon which it has now been constructed adopted in lieu of it?—In 1863. It was ascertained that the original plan could not be carried out without exceeding the estimate.

2860. (*President.*) Will you state to the Committee what measures were taken for preparing the site for the batteries at Warden Point and Cliff End?—The steps taken were thoroughly to drain the site to prevent water getting into the soil, and to construct a sea-wall for the protection of the toe of the site from the action of the sea. The inland surface was drained in the ordinary manner adopted in agricultural drainage; the sea faces were drained according to the furrows and ridges which presented themselves, and which indicated the best lines for carrying off the water. It was impossible to make a plan for this cliff drainage, and it was considered that the best course was to employ a drainer of great experience to do the work. The drainage at Cliff End has been a matter of considerable difficulty, but when the work is finally completed, and grass has grown upon it, I have no doubt it will be a very satisfactory job, and afford an admirable site for a very important battery which could not otherwise have been constructed.

2861. Mr. Parkes, I believe, was the person who drained it?—Yes, but he was employed for the drainage works only.

2862. What was the nature of the agreement made with Mr. Parkes? Was the expenditure entirely under his control, or was there any check upon the expenditure?—For the inland part, which it was possible to estimate, and for the wall, there were distinct estimates; but as regards the sea faces, it was impossible to form any reliable estimate for them; and the only course which could be adopted was to employ day labour, and to pay for the work from time to time as it was executed.

2863. (*Major-General Simmons.*) Were the wall and the inland drainage executed by contract then, and the cliff drainage only by day labour?—The wall was executed by contract; the inland drainage was executed, not on a contract, but on an estimate furnished by Mr, Parkes, and approved prior to the commencement of the work.

2864. (*President.*) So much per rood?—So much per acre for the upland part. The cliff part was, as I said before, impossible to estimate; it could only be paid for according as the work was performed.

2865. Were the payments made from time to time by the Commanding Officer of Engineers, or under his superintendence in any way, or were they made from the War Office?—Direct from the War Office. We gave Mr. Parkes imprests according as the works proceeded, and received reports and accounts from him from time to time.

2866. And you looked upon Mr. Parkes as wholly responsible for the execution of that work. Yes; I look upon Mr. Parkes as wholly responsible for the execution of that work; he had been very successful in other cases of a

similar character in which we employed him, and he has also been successful in this.

2867. You have drawn a distinction between the land drainage and the drainage of the sea slopes. Had he been employed in any drainage similar to that upon the sea slopes before?—Yes; he had been employed upon a similar piece of work at Yaverland in Sandown Bay, and executed it very satisfactorily. It was not of so difficult a character as the Cliff End drainage, but it was similar in principle, and was dealt with in a similar manner.

2868. That, I presume, was between the counterscarp and the glacis at Yaverland, in front of the fort?—No, the part I refer to is the drainage of the cliff. At Yaverland there is a sea wall protecting part of the site, and between the sea wall and the work is some drainage on the cliff.

2869. Then there is a ditch and glacis between that and the work?—Yes; there is the ditch and the glacis between that and the work, and that is also drained, and very satisfactorily drained. You will see an instance of what may be done by drainage upon the north shore in the Isle of Wight, in passing Norris Castle. Within the grounds, where it is drained, and where there is a sea wall, there is a beautiful green sward and an undisturbed surface. Outside of it, it is much in the same state as the ground was at Cliff End before it was drained.

2870. (*Major-General Simmons.*) Is the ground to which you allude at Norris Castle as steep as the cliff at Cliff End or Warden Point?—Perhaps not, but it is a similar kind of stuff.

2871. Do you consider that the drainage which is what may be called surface drainage, and what has been done to protect the cliff at Cliff End, will be sufficient to render it probable that there will be no heavy slip caused by land springs getting at the back of the cliff altogether, and so thrusting it outwards?—Yes; it is done with that view. All the land we possess there, which comprises the whole of the space from which the stability of the site for the batteries could be influenced, is drained so as to take the water off from it.

2872. For instance, it would appear that there is some higher ground to the eastward?—No; this is the ridge (explaining the position of the ground upon the plan). The principle is, to carry off the water which falls upon the surface in order to prevent its penetrating into the soil, to protect the toe from being eaten away, and the site will be secured.

2873. There appears to have been a slip here lately. Did that slip occur after the drainage had been completed at that part?—It occurred after the drainage had been completed at that part, but before it had thoroughly consolidated, and before the grass had grown upon it. You must allow it some time to get thoroughly settled to operate thoroughly, and for grass to grow on it. I think we have had sufficient experience now of it to know that it will thoroughly answer.

2874. Then you feel no hesitation in constructing your battery near the brow of the cliff, according to this design?—No; I feel no hesitation about it. I should drain the battery in connection with the drainage of the cliff, so as to take off the water from the battery also.

2875. (*President.*) The formation of the ground would not have admitted of the battery being put further back without very heavy expense in cutting down the hill, would it?—No; we should have incurred more expense in cutting back the cliff, than we have done in draining it. In short, the drainage, I think, will be found to be by far the most economical and effectual plan that could be adopted.

2876. (*Major-General Simmons.*) It appears that the crest of the parapet in the case of some of these guns is within 33 feet of the brow of the cliff, which allows a very small margin supposing there should be any inclination to surface slip (taking mere surface slip without taking into account any deeper slips that might occur), do you not think it would be advisable to throw it back a little, so as to allow for a greater slip than that superficial slip which has taken place recently?—The slips which have taken place have been in a mass, and there does not appear to be any inclination to *surface* slip; I do not contemplate that with this drainage, when it is thoroughly settled, and the grass has grown upon it, any more slips will take place.

2877. This was a surface slip which is described to have taken place lately?—Yes; but you must allow time for these things to get settled. The further you put the battery back the more expensive it would be, as the ground falls from the top of the cliff inland, and it would be necessary to cut away a large portion of the top of the cliff, in proportion as you move the battery inland.

2878. (*President.*) Can you furnish the Committee with separate statements of the expenditure upon the drainage and upon the sea wall?—Yes.

2879. (*Major-General Simmons.*) Is there any idea at present of placing an apron or any work of that character either in front of the Warden Point or the Cliff End sea walls?—There is no intention of doing so at present, but I think that it is probable that it may be necessary at some time to do so at some parts of the wall.

2880. When I visited it the foot of the wall was apparent in certain places. Would it not be advisable to adopt some means to protect that at once, because it appears to be liable otherwise to be undermined by the sea?—If it is now exposed (of which I am not aware), it would be so.

2881. A little of it was when I was there, but of course it is liable to fluctuations, according as the shingle is thrown up against it or carried away by the sea. It would require to be watched carefully?—Yes.

2882. (*President.*) I presume that any expenditure for that purpose would be considered to belong rather to the maintenance than the construction of the work?—Yes; it would belong to the maintenance, and would be provided for in the annual estimates.

2883. Part of it is already provided with an apron at Warden Point?—Yes.

2884. And if necessary, that might be extended and the expense would be provided for in the Annual Estimates?—Yes; just in the same manner as protecting the beach at Haslar, for instance.

2885. Is the plan of Cliff End now laid before us an approved plan, or merely one of those submitted to us under the authority of the Secretary of State?—You may take that as an approved plan. The number of guns and the mode of mounting have been approved, and it is a question for the Executive to consider, how to carry out that plan under the circumstances of the site.

2886. The plan has been approved of by the Defence Committee?—Yes; that is to say, so far as regards mounting a certain number of guns en Moncrieff, and a certain number en barbette.

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2887. (*Major-General Simmons.*) There is no alternative plan before us in this case?—No.

2888. If the Moncrieff did not answer, would the battery be entirely en barbette?—It would.

2889. (*President.*) That would involve less expenditure?—That would involve less expenditure than the Moncrieff plan.

2890. The sum taken in the estimates, therefore, would be sufficient to complete that battery on either plan?—Yes.

2891. (*Major-General Simmons.*) But on the Moncrieff plan the guns would be much better protected than on the barbette?—Yes.

2892. (*President.*) With reference to the drainage, do you think it it possible that any water could find its way underneath the present drainage from further inland, so as to endanger the stability of the work?—I think not. I think the drainage is carried sufficiently distant from the work to ensure that not taking place.

2893. Is there any fear of water coming down from inland and coming underneath?—I think not. The natural outlet for that water would be here along the valley. That is the valley of drainage (pointing out the same on the plan).

2894. (*Major-General Simmons.*) Do you feel entire confidence yourself that that inland drainage is acting properly now?—I have no reason to believe that it is not.

2895. How long has it been done?—It has been done some years.

2896. Have you had it examined lately?—I have not had the outlets examined very lately; but from the appearance of the surface it appears to act thoroughly; it is an ordinary kind of drainage, which is always found to answer well.

2897. I see that in this plan the line of the crests of the parapets of the guns in the East battery is 40 feet from the edge of the cliff, and in the West battery 50 feet. Do you not think it would be attended with advantage, looking at the possible slips hereafter, if it were put a little further back, considering also the great penetration that shot have into parapets?—The question is one of compromise between the necessary amount of protection in respect of the thickness of the parapet, and the additional expense which I was before referring to, which would be occasioned by taking the battery further inland, which, as I said before, necessitates cutting away a very large portion of the crest of the cliff. I wish to have the top of the parapet as nearly as possible on the natural surface of the ground.

2898. (*President.*) I observe that in the estimates there is an additional sum taken for adapting it to the Moncrieff system; therefore the estimate as it stands appears to be an estimate for completing it en barbette?—Yes; that is because the Moncrieff plan is contingent upon its being found that the system is applicable to guns of 12 tons weight and upwards.

2899. With respect to the parapets at Golden Hill, some slips have occurred, and parts of the parapet have not been restored or repaired. Do you apprehend that there is any danger of any further slipping taking place? Do you apprehend that any further expenditure will be required upon those parapets?—I think there may be some incidental expenditure hereafter, but I do not anticipate anything requiring extensive expenditure.

2900. There has been no report of any further fall of late?—There has been no report of anything further. We have had a good deal of trouble with the glacis.

2901. In January 1868, I think?—Yes.

2902. (*Major-General Simmons.*) Is that counterscarp now pretty firm?—I believe it is.

2903. You have had no slip there lately?—No.*

2904. (*President.*) The work contemplated by the Commissioners at Golden Hill was a more complete work than this which has now been constructed, was it not?—The Defence Commissioners proposed that a fort to contain the necessary barrack accommodation for the men, and work the additional guns recommended by them in adjacent batteries, should be placed on a central point between Cliff End and Freshwater, *i.e.* at Golden Hill. They also observed that the fort should be complete in itself. The work as constructed fulfils these conditions. It provides barrack accommodation for the adjacent batteries defending the Needles Passage; the buildings are constructed in a defensible form, and capable of mounting light guns on the roof. The whole is covered by a glacis. The work, however, is not constructed as a fort in the same sense as one of the Portsdown Forts, capable of resisting a regular land attack, because the principle of defence adopted in the Isle of Wight is to prevent an enemy landing in force on any part to the southward between the Needles on one side, and Spithead on the other. The fort, however, also forms a good defensive post as a centre to a position, having the Yar River in its front, where an enemy who might have succeeded in pushing on shore a small body of troops at Freshwater, or to the eastward, with a view of moving upon the Cliff End batteries, might be successfully opposed.

2905. (*Major-General Simmons.*) The distance of Hatherwood from Golden Hill would appear to be so great, that Golden Hill could scarcely be looked to, to supply the men to work that battery, nor to afford any defence for its interior, especially as there is a large hill between it and Golden Hill?—It does in this sense—that its fire would bear on troops that during action might land in the adjacent bays with a view of running into the sea batteries and spiking the guns.

2906. One has also to look to a possible landing along the coast here towards Freshwater?—I do not see how an enemy is to land in any strength in the Isle of Wight, provided a moveable force of about 5,000 men be placed in the centre of the island ready to move on any point of the shore. The only part of the coast of the Isle of Wight on which a large force could land,—viz., Sandown Bay,—is well protected by batteries. We have a military road along the coast to the south-westward, and there is a good road already to the south-eastward; there is a railway from Ryde to Sandown and Ventnor, and a Bill has been passed for a railway from Newport to Sandown; there is a project, also, for a railway from Newport to Chale, and then to run along our military road to Freshwater, so that a force operating from the centre would be thoroughly able to protect all points at which bodies of troops could be put on shore to the southward, between the fortified channels at the Needles, on the one side, and at Spithead on the other.

2907. Have Acts of Parliament been passed for these intended railways?—An Act of Parliament

* Since the date on which this evidence was given, a report has been received from the Commanding Royal Engineer, stating that slips have lately taken place in the counterscarp at Golden Hill.

has been passed for that from Newport to Sandown, and there is a proposal not yet submitted to Parliament for running a line along our military road to Freshwater.

2908. The Commissioners recommended batteries also at Atherfield, at Brixton, and at Brook: what steps have been taken about them? Yes; but subsequent consideration has led us to think that permanent batteries there may be dispensed with.

2909. But those batteries were included in the estimates up to 1865, were they not? there is a sum of 35,000*l.* for them up to that time?—They were named in the Schedule, but I think that with the other means of defence to which I have referred, no one who had been able closely to examine this part of the coast would now consider them necessary.

Bembridge Fort.

2910. When the Committee visited Bembridge Fort, it occurred to me that the magazines were scarcely sufficently protected. Is any remedy now proposed to give additional protection to them?—Yes; it is proposed to thicken the inner wall of the main magazine on the north side, as shown on this plan. I may add that it is also proposed to appropriate what was formerly the shell-filling room, as part of the magazine accommodation, and to have a shell-filling room at a distance from the magazine. The proposal is, to appropriate one of the casemates in the work partly as a shell store and partly as an artillery store, and to have a shell-filling room in what was the artillery store.

2911. (*President.*) I believe the recommendation of the Committee which was appointed to examine into the magazines generally was, that the shell-filling-room should be immediately in connection with the magazine?—Yes, that was the recommendation of the Committee which reported on these matters in 1860.

2912. Is that plan now given up?—That plan is now given up.

2913. Will you state what is proposed with reference to the expense magazines?—It is proposed now to make lifts from below to the bomb-proof traverses on the terreplein, and to somewhat lengthen the traverses, so that there would be bomb-proof accommodation above in connection with the casemates under the rampart, and ammunition would be served from the casemates below.

2914. It would not then be proposed to keep any large amount of ammunition in the upper part?—No; only what is wanted for the service of the guns from time to time.

2915. (*Major-General Simmons.*) Is any alteration proposed in the communication between the covered way and the ditch?—Yes, a cut is proposed with a moveable plank placed across it.

2916. (*President.*) Are these alterations provided for in the estimates?—Yes.

2917. I see that part of the sum necessary for these improvements is to be charged to the Annual Estimates?—Yes.

2918. Will any of that be taken this year?—We have a sum this year in the estimates applicable to such services, but no decision has been come to as to the precise application of that sum.

2919. Merely a general sum?—Merely a general sum.

2920. For the improvement of the magazines?—It would be applicable to cases such as that referred to; it is called "*alterations* to works consequent upon the adoption of modern armaments." The necessity for this provision arises from the changes which have taken place in guns, and in the arrangements for the supply of ammunition since some of the works were planned.

2921. (*Colonel Harness.*) It is for alterations which would have been necessary from the circumstances of the change of artillery, independent of anything else?—Yes, including the improved means now adopted for the storeage and service of ammunition, and it is applicable to cases such as those you refer to.

2922. (*Major-General Simmons.*) And the Milford defences?—Yes, the Milford defences.

2923. Where we have had more considerable sums spent?—Yes, for alterations rendered necessary by altered conditions relating to armaments.

Redcliffe Battery.

2924. (*President.*) With reference to the Redcliffe Battery, there has been a considerable slip on the left flank of that battery, coming up close to the parapet, if I remember rightly?—I was not aware of that.

2925. It was in August, 1868. The statement we had was, that on the left flank of the work part of the bank began to give way in 1867, and that in August 1868 it fell into the sea?—We have had no report of that, and if it had been of any consequence, I think the Commanding Engineer would have reported it. I may add, with reference to an idea that appears to prevail that Redcliffe Battery will slip into the sea, I have often inspected the work, and have never been able to arrive at that conclusion. A trustworthy, intelligent man who has farmed the land for the last 30 years, and who still continues to rent the land outside the battery, declares positively that not a yard (to use his own expression) has slipped during that period. The slip you refer to must, I think, be of very little consequence. There were proposals for constructing a sea-wall to protect the site from the action of the sea, but in my opinion that is altogether unnecessary. If it is found desirable at any future time (and if it be so, it will be a long time hence), the parapet might be withdrawn further inland.

2926. The nature of the ground would not have admitted of that battery being placed further back without incurring a very considerable expense, would it?—No.

2927. The ground falls behind it, I think?—Yes; and the battery was placed as far back as it could be, consistently with considerations of expense, and also of sweeping the beach which it was intended to command.

2928. Would any other position near there have swept the beach with the same effect?—No; it occupies the best position for flanking the beach.

Yaveland Battery.

2929. At Yaverland Battery you have already stated that the drainage has been quite successful in preventing any further movement in the face of the cliff there?—Yes, quite satisfactory.

2930. And you do not apprehend that there will be any more?—No, I do not apprehend any. It may hereafter, perhaps, be necessary to extend the sea-wall and the drainage a little further; but at present we see no necessity for it. The sea-wall and the drainage have been carried to such extent as was considered necessary for the protection of the battery.

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Sandown Fort.

2931. (*Major-General Simmons.*) With respect to the 10 guns on the platform of Sandown Fort. Is the fort not so constructed for them that they were intended to fire through iron?—No; it is now proposed to construct it for guns mounted on the Moncrieff principle; and there can be no doubt about applying there guns mounted on that principle, because they would not be guns of more than 7 tons weight.

2932. But are they not actually constructed with the idea of placing iron in them?—No, they have high genouillères, and there are no means for putting iron in them.

2933. (*President.*) It was stated to us, in looking at the magazine, which was very damp, that the drainage of the ditch was insufficient—is there any proposal to improve that?—We have a drainage project under consideration, but the drainage of the ditch is only necessary with regard to sanitary considerations.

2934. (*Major-General Simmons.*) Has any project been made for the drainage of the ditch on sanitary grounds?—Yes.

2935. And is it included in the estimates before the Committee?—Yes, it is included in the estimates which are laid before the Committee.

2936. (*Major-General Dickson.*) Supposing the guns on the terreplein above the casemates were not mounted on Moncrieff's plan, what protection would you give them?—It is proposed to mount them on Moncrieff's principle.

2937. (*President.*) There is no alternative plan then?—No.

2938. (*Major-General Dickson.*) There are 7-ton guns, and therefore the Moncrieff plan is applicable to them?—Yes; this is a case in which the Moncrieff plan is known to answer.

2939. That is a case in which the Moncrieff gun gets you out of a difficulty?—Yes.

2940. (*Major-General Simmons.*) With reference to the protection of the beach at Sandown, are the War Department liable for the maintenance of the beach in front of Sandown?—I think not, except in concert with the owners of land generally.

2941. Is the maintenance of that beach a source of constant expense to the War Department?—At the present moment the question is being discussed with the local authorities.

2942. (*Colonel Harness.*) There is a road between the fort and the sea, I think?—Yes.

2943. Has not that road always been maintained by the inhabitants of the place?—Yes, the road in front of the present fort has been so maintained.

2944. And it has always been so maintained, has it not?—I presume so.

2945. (*President.*) You are not aware that there has been any money paid by the War Department for the maintenance of that road?—No; I believe there has been none paid by the War Department. The position of things is this: a breach in the wall in front of the site of the old fort has been caused by the late gales, and an estimate for its repair has been submitted; but we say we do not now care about the maintenance of that part of the road, and we consider the local authorities and the owners of land should co-operate, according to their interests, in sharing the expense.

2946. I presume that the War Office has a certain liability as the owner of the land adjoining?—The War Office, as the owner of the land, should probably share the expense.

2947. (*Colonel Harness.*) Do you mean the land on which the road runs? It is a public road, is it not?—I do not mean the land on which the road runs. It is a public road; but the War Department owns a belt of land along the shore.

2948. I presume the road belongs to the Road Trustees?—I presume so.

2949. (*Major-General Simmons.*) Is it not the fact that the War Department have maintained the groynes in front of that work for some years?—No, not in front of the present fort.

2950. Is not the maintenance of that road, or rather of the bank in front of the road, essential for your fort?—The action of the sea must affect the road, and those who are liable for keeping up the road, before it affects the fort.

2951. But looking at it merely as a matter of defence, do you not consider that bank of very great advantage, and indeed essential, for the fort, as affording protection to the fort from fire,—in fact, taking the place of a glacis?—The bank no doubt acts as a glacis to the lower part of the new fort; but the question of liability for maintenance of the bank does not arise with reference to the part in front of the new fort, but to that part in front of the site of the old fort.

Portsdown Hill.

2952. (*President.*) Then we come to Portsdown Hill, beginning at the right of the line of defence; the Defence Commissioners recommended that at a point between Langston Harbour and Farlington Redoubt lines should be formed. Has any land been purchased between Farlington and Langston Harbour?—There has been land purchased for an earthwork at the head of Langston Harbour, but no land has been purchased for the lines which you refer to.

2953. (*Major-General Simmons.*) I don't think the Commissioners recommended a detached work; they recommended lines only?—The earthwork would take the place of the lines, and would be much less expensive. I think it would be impossible for an enemy to push his way in between Hilsea Lines and Fort Purbrook. At all events, the redoubt to which I refer (which need not be a permanent work) would perfectly close the space.

2954. (*President.*) But do not you think it is necessary to construct that at present?—No, we do not consider it necessary to construct the redoubt at present. It is a work that might be thrown up at a time of expected attack. It is in a position where facilities exist for doing so.

2955. (*Major-General Simmons.*) Would its ditch be in connection with the tidal water, so that it would have a wet ditch?—Not necessarily; but it could be so designed.

2956. (*President.*) With regard to the Farlington and Crookhorn Redoubts, the designs, as they are now, are modified from the original designs, are they not?—Yes; the first designs were of an expensive character.

2957. For more complete works than those now contemplated?—They comprised casemated flanks and many other accessories, which would have caused a considerable additional expenditure upon the sum provided for the Portsdown Line, and it was considered sufficient to complete Fort Purbrook, leaving the Farlington Redoubt and the

Crookhorn Redoubt, to be executed hereafter, as outworks into which moveable guns would be placed, and which might be withdrawn, should the circumstances of the attack render it desirable to do so.

2958. And that they should not have any permanent armament?—Not to have any permanent armament. The ditch at Farlington was cut, and we commenced the ditch at Crookhorn, but at the latter place it was found that half the work was upon chalk and half upon very greasy, slippery clay, which was very difficult to deal with, so it was ultimately proposed to cut off what I may call the "nose" of the Crookhorn Redoubt, and to form it and Farlington Redoubt as earthworks entirely upon the chalk formation, and that is the design which has been laid before the Committee.

2959. (*Major-General Simmons.*) What was the estimate for these works according to the original design?—The estimate for these works, according to the first design, amounted to 175,000*l.*

2960. Were they estimated in detail?—No; when I found, after making approximate estimates, that their cost would be so much in excess of the sum available for them, there was no use in making "detailed" estimates.

2961. (*President.*) 135,000*l.* was the sum taken in 1862 for this purpose?—Yes.

2962. (*Major-General Simmons.*) Did the contract that was commenced include their completion?—The original contract was for the excavations only of Fort Purbrook and outworks. The contract was subsequently extended to include builder's work; but a question was raised by the contractor, during the progress of the work, as to the amount of work which he was to do at the outworks, and it was thought advisable only to employ him for completing the main fort—Fort Purbrook.

2963. Was that a lump sum contract then for the whole of the works?—No; it was a contract on prices.

2964. (*Colonel Harness.*) Why did he object to the work ordered for the outworks?—He thought that he ought to have more work given him to do.

2965. (*Major-General Simmons.*) If the work had been carried out according to the design in its integrity, then he would have had no cause of complaint?—The contractor contended that if the outworks had been carried out and completed with all the casemates, he would have had a more profitable job, owing to the greater amount of work that would have been given him to do.

2966. Is it intended still to cut down the top of the hill so as to open the interior of Farlington Redoubt to a fire from Purbrook, according to the original design?—The plan provides for that cutting; but the execution of this part of the work will depend on whether the extra sum that will be required to carry it out is sanctioned by the Secretary of State, and voted by Parliament.

2967. Is the formation of the ground according to the plan now before us by which it would appear to be reduced as shown by the red contour lines, included in the estimates that have been laid before the Committee?—It is.

2968. Is anything intended to be done with the ditch in front of the Crookhorn work?—The project provides for filling in that part of the excavation in clay, so as not to afford cover in front of the Crookhorn Redoubt.

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2969. Has this plan, as we have it now, been approved by the Defence Committee?—No; but the original plan was. The detail of the work is a matter of an executive character consequent upon ascertaining the stuff to be of a different nature from that which was supposed when the work was designed, and that the cost would far exceed the estimate if the first plans had been carried out in their integrity.

2970. (*President.*) The expense magazines in these forts generally do not appear to be sufficiently protected; is there any intention of making any alteration?—At Fort Purbrook they are quite sufficiently protected, but at other works on Portsdown Hill the bomb-proofs on the ramparts are perhaps not sufficiently secure to resist the fire that might be brought upon them in the present day. I should propose, if those works were likely to be attacked, to construct temporary magazines of timber and earth, and other necessary accessories, in rear of the rampart on the terreplein.

2971. At a lower level?—Yes.

2972. (*Major-General Dickson.*) On the parade?—Yes; on the parade.

2973. (*President.*) The plan adopted at Purbrook would not be applied to this, of having the magazines underneath?—No; that is an improvement that was adopted in later works, and which will be found also at theNorth-East Defences at Plymouth.

2974. (*Major-General Dickson.*) Could not you adapt it to the other works—the Portsdown works, for instance?—Scarcely, because you would have to go down underneath the foundations of the present magazines; it would be better to construct them in rear.

2975. (*Major-General Simmons.*) Is it intended to construct any magazines in Farlington Redoubt?—No, the intention is that they should be supplied with expense magazines of timber and earth of the character which I was just now referring to with reference to Fort Widley and other works.

2976. Is any provision made for collecting the rain water in these works into tanks?—We have tanks in the works, but the arrangement for the supply of water is, to pump it up from the Water Works near Farlington, and we have a special arrangement with the Water Works Company for that object.

2977. Where is the pumping engine situate—is it within the line of works?—The pumping engine is within the line of works.

2978. Between Hilsea and Fort Purbrook?—Yes.

2979. (*Colonel Harness.*) And they keep your tanks full?—Yes; they are to keep our tanks full, and they might do so up to the last moment.

2980. Of what capacity are the tanks?—I will refer to the Commanding Royal Engineer's Report.

2981. Is it 84,000 gallons?—Yes.

2982. Is that for each fort?—Yes; there is a tank of that capacity in each fort.

2983. (*Major-General Simmons.*) Is the pumping engine in your own hands, or in the hands of the Company?—The pumping engine is in the hands of the Company; but the Company keep it up, I believe, solely with reference to the agreement we have with them.

2984. Is it in a bomb-proof building?—No.

2985. (*Colonel Harness.*) What distance is the pumping engine in rear of the Portsdown Hill

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Lines?—It is some distance from Fort Purbrook, in rear of the hill, about 1,200 yards.

2986. (*Major-General Dickson.*) Would it not be desirable to have means of collecting the rain-water there?—You could only collect it from the terreplein.

2987. But from the buildings, could not you collect it?—From the buildings you would have to carry spouts across the area between the case-mated barrack and the works. With the arrangements with the Water Company for the supply of water, we do not want to go to any further expense for a supply from rain-water tanks.

2988. (*President.*) At Fort Wallington you had greater difficulties to contend with than at the other forts, had you not?—At Fort Wallington we found, on execution, that half the fort was on the chalk—at the termination of the chalk on Portsdown Hill—and half on the greasy, slippery clay, which is so difficult to deal with; we had, therefore, to incur additional expense in providing very strong escarps.

2989. A failure occurred, which has been made good there, I think?—Yes.

2990. Do you apprehend any further giving way?—I do not apprehend any further giving way. The original escarp was very strong, but the force exerted by the clay was so great that we found it was pushing part of the escarp out; we therefore removed the material from the back part of the escarp, and added additional weight and additional thickness behind the escarp. I have every reason to believe that it is now fully capable of resisting the pressure which is brought to bear upon it.

2991. (*Major-General Simmons.*) Has the work been re-commenced at Fort Wallington yet?—No.

2992. (*President.*) The main magazine at Wallington appears to be scarcely sufficiently protected from fire; it is by covered 17 feet of earth, 1 foot of concrete, and 3 feet of brickwork?—It may perhaps require some strengthening, by substituting concrete for earth, but the fire upon it is oblique. It seems doubtful whether more strength is required.

2993. (*Major-General Simmons.*) As the fort is now proposed to be completed has not the covered way been abandoned?—It is not intended to execute the covered way as a permanent work. That may be done at any time.

2994. And you do not excavate the ditch to the original width?—No; that seems unnecessary; instead of being a built-up counterscarp, it is left as a slope, with a view of saving expense.

2995. (*Colonel Harness.*) Therefore the edge of the counterscarp is rather further out than it was before?—The edge of the counterscarp is rather further out than it was before. We were obliged on other faces to build a counterscarp to retain the clay, and also with reference to a reservoir which is on the glacis, which for economy's sake we did not think necessary to purchase from the Water Company.

2996. (*President.*) Is the water laid on to this fort from Farlington Water Works, as well as to the other?—No; the water is at present supplied from Fareham Water Works; but a pipe could be laid down from Fort Nelson in connection with the Farlington Water Works.

2997. (*Major-General Simmons.*) Fareham Water Works being outside the line, would it not be desirable to do so?—It would on military considerations, and it might easily be done at any time.

2998. (*President.*) I observe that the water tank here, instead of giving 84,000 gallons of water, as it does in the other forts, only gives 3,850: therefore it is very small, and you are dependent on a supply which comes from outside your works?—That reservoir is on the glacis. It is not a usual military arrangement for the supply of a fort; but, as I have said, pipes may be laid in connection with the Farlington Waterworks, and the tankage might be increased.

2999. (*Major-General Simmons.*) It would appear that under this modified arrangement the drawbridge must be across a part of the ditch where it is only about 2 or 3 feet deep; is it intended to make a drop there, or anything of that sort?—It would be an additional security to have a drop; but the gateway is close under the fire of the Redan, in rear of the work, and the drop seems scarcely necessary.

3000. With regard to Fort Southwick and Fort Nelson, is it intended to cover in these small "places of arms,"—if one may call them so, in the *chemins de rondes*, because at present it would appear that they could afford very little defence?—As to Fort Nelson, it is a very difficult problem to cover that *chemin de rondes*. I have often looked at it with a view of proposing some plan for it, but I do not think it worth the money that it would cost.

3001. As it is now, the defence cannot be very good, because any men running a few feet up the exterior slope would see right into the interior of the work?—I do not look upon that *chemin de rondes* in the light that its main function is to be manned, but as increasing the height of the escarp, and as affording a space between it and the rampart, in which the rampart, if brought down at any point by an enemy's fire, would be caught, and by that means would be easier re-made. The rampart is retired, also, and the prolongation of the exterior slope is well below the point at which breaching could take place; therefore, even if the escarp is breached, the rampart would stand.

3002. (*Colonel Harness.*) If the upper part of the exposed part is breached?—Yes; in that case, the rampart would remain. I should observe, moreover, that the spaces before referred to might be covered with timber and earth at a time of expected attack, supposing it be thought desirable to do so.

3003. (*Major-General Simmons.*) What was the cause of that great spoil bank in rear of Southwick: could not the material have been usefully employed in the glacis?—No; you will see by the section of Fort Southwick, if you examine it with reference to the natural surface, that there is very little filling, in comparison to the cutting. The rampart is much less above the interior surface than at the other works; so that the excavation for the ditch gave a great deal of surplus stuff. There was a great deal of discussion at the time whether this surplus stuff should be thrown out by rails to fill in hollows, at some distance in front of the work; but on going into the question, I found that that would require an expenditure far in excess of what it was worth; and that by far the most economical plan, and the best plan, was to get rid of this excavation by means of a cut through the ditch, and to throw out that redan of spoil in the rear, which will form a good parade-ground for troops quartered in the work. It was, in short, done with a view of disposing of the excavation in the most economical manner,

and, at the same time, providing a convenient parade in connection with the work.

3004. If you had thrown it to the front, would you have had to carry it any great distance?—Yes, a long distance.

3005. (*President.*) Then it was simply as a measure of economy that it was placed where it was?—Yes; the plan was decided upon on account of economical considerations.

3006. Do you apprehend that there is any danger of the chalk in the escarps giving way at all in any of these forts?—No; I do not.

3007. (*Colonel Elwyn.*) Little bits will come off, no doubt?—Yes; perhaps little bits may come off from time to time.

3008. (*Major-General Simmons.*) That only applies to the counterscarps, because the escarps are secured?—Yes; the escarps are secured.

3009. If any material falls there, it would not affect the security of the work, and whenever the work came to be mantled for defence it could be carted out?—Yes.

3010. (*President.*) The same remarks with reference to the floors of the magazines we have already spoken of, I presume, would apply to these?—Yes; I think they ought to be of asphalte.

Fort Fareham.

3011. With regard to Fort Fareham, are the parapets now made up to the height that is represented upon this plan?—There is at present a sinking in the parapet, but the sum which is included in the estimate which is laid before the Committee will provide for making the parapet up to the levels shown on the plan.

3012. (*Major-General Simmons.*) In the estimate which was sent from the district, the quantities were taken out with great care, and it would appear that the sum demanded for completing the earthworks according to the plan, which was then the approved plan, was 6,000*l.*; in the present estimate it has been reduced to 3,000*l.* Has any alteration in the plan been made to meet that reduction of the amount of earthwork?—The estimate from the station included a considerable sum for raising the glacis all round, and this did not appear necessary.

3013. That was to raise it up to the heights indicated in a plan which was then the approved plan?—The plan was, not in the point you refer to, an approved plan. In the estimate that I have laid before the Committee, the only part where a considerable raising of the glacis is included, is in front and on either side of the caponnières.

3014. (*President.*) What is the sum now taken, and how is it provided?—The total inserted in the abstract sent up from the district is 6,245*l.* Of this amount there is for filling, 5,278*l.*,—the difference of 967*l.* being allotted to gravelling, soiling, and sowing with grass-seed. The sum of 6,245*l.* includes for making up glacis 36,700 yards, 4,334*l.*; then there is for soiling and sowing, 436*l.*: total, 4,870*l.* For making up parapets 6,985 yards, 844*l.*; and soiling and sowing, 370*l.*; that is 1,214*l.*, which, added to 4,870*l.*, makes 6,084*l.*, the remaining 161*l.* being for gravelling,—thus making the total of 6,245*l.*

3015. What sum do you propose to take instead of that 6,245*l.*?—3,000*l.*, which is proposed to be allotted as follows: gravelling, 161*l.*; making up parapets, soiling and sowing, 1,214*l.*

3016. That is the same as before?—Yes. Partially raising glacis, 1,624*l.*: total, 3,000*l.* A further sum of 2,546*l.* is provided for raising the height of the glacis on the caponnières. So that really, instead of the original sum of 6,245*l.*, we provide 5,546*l.*,—that is 3,000*l.* plus 2,546*l.*

3017. (*Colonel Harness.*) You have only knocked off 1,000*l.*?—Not quite so much; only 700*l.*

3018. (*Major-General Simmons.*) The 2,546*l* is for additional work?—It is substituted for the other.

3019. (*President.*) Does that 2,546*l.* additional provide for raising the glacis further round than what you described at first?—The 1,624*l.* provides for the partial raising of the glacis over its whole extent; but besides that, 2,546*l.* was added in this office, in addition to the 1,624*l.*, for the special purpose of affording increased cover to the caponnières.

3020. Is that for raising the glacis at a different point from that for which the 1,624*l.* was taken?—It would be distributed in a different manner. The sum provided in the district estimates would have carried out the glacis, at a very gentle slope, far into the country. This provides for raising it wherever it is necessary for the protection of the caponnières, and for finishing the remaining portion at a less gentle slope, and to a less distance.

3021. Then there is above 4,000*l.* provided altogether for that?—Yes; there is 4,170*l.*

3022. (*Major-General Simmons.*) Was not a part of the object of that cutting in order to open a sunken road that there is within a very short distance of the right flank of the work to the fire from the work itself?—It may prove convenient to obtain a portion of the earth required from that locality.

3023. I was informed on the spot that one object in the cutting was to open that road?—It would be quite unnecessary to do that as a permanent work.

3024. Is it intended to construct the work with a cunette at present, or to excavate the ditch to the bottom, the whole width of a uniform depth?—The proposition before the Committee is, to have a cut in the middle of the ditch, as you see in the plan. It might be a question of going a foot more one way or the other, if you wanted stuff.

3025. (*President.*) The ditch would not be widened more than is necessary to provide the additional stuff that is required for the glacis?—No.

3026. (*Colonel Harness.*) You propose to make a cunette? Yes, it is proposed to make a cunette in the centre of the ditch.

3027. The price seems to be very high?—The local officers gave it at 2*s.* 5*d.* If military labour is employed (as would probably be the case there, because these barracks are, I believe, now occupied), there would be a reduction in the cost.

3028. (*President.*) With reference to the supply of water,—at present the water rises very near the surface in the well?—Yes.

3029. Can that be calculated upon? If I remember rightly, in the Report it was stated that wells were sunk to a great depth,—to 200 feet,—without having found water?—No; they were sunk to a depth of 135 feet without finding water, and were then increased to 200 feet. The water now rises to within a foot of the surface.

3030. (*Colonel Harness.*) There is nothing to show what supply of water can be got at that

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depth, is there?—It will depend entirely upon the depth at which the water is drawn off.

3031. (*President.*) The Report says that the wells were sunk to a depth of 135 feet; and then, finding no water, they were sunk to 200 feet. In consequence of going down to that depth of 200 feet, has the water risen to the surface?—Within one foot of the surface.

3032. And that you consider can be calculated upon?—If the water is drawn off for the supply of the ditch at a lower level than that at which it now stands, a constant supply may be calculated upon; but I cannot say to what extent the supply may be relied upon from that source.

3033. Do you consider that it may, at any time, become necessary to procure a supply of water from Fareham or some other place?—The water is laid on already from Fareham.

3034. (*Major-General Simmons.*) But those works being outside your line of defence, you cannot depend upon them for your water supply?—Not for military purposes.

3035. The wells are sufficient, I presume, for military purposes, for the supply of the garrison?—Yes.

3036. Do you think it would be necessary to take any special measure for filling the ditch with water?—I do not at present contemplate incurring any expense for that purpose. The water standing at so high a level in these wells would probably suffice for filling the ditch. Should the supply prove inadequate (which is not expected), other measures will be necessary. There has been a project for supplying water to the ditch from Fareham Lake by one of Gwynn's or Attwood's pumps, but there is no intention of incurring the expense of carrying out that project.

3037. (*Major-General Simmons.*) If desired, you could always bring a portable engine and pump, I presume?—No doubt.

3038. (*President.*) Was the land purchased for the connecting lines between Fort Nelson and Fareham Lake?—No; it was not considered necessary to incur the expense of purchasing land for those lines.

3039. With reference to all the works we have been going through now, the cost has very much exceeded that which was estimated in 1862. To what is that excess owing?—It is owing to some necessary additional work not contemplated in 1862, as, for instance, in the escarps at Wallington; and several services which were not included in 1862 have been provided for in the estimates laid before you.

3040. (*Major-General Simmons.*) What caused the reduction in the estimate for Fort Fareham from 113,000*l.* in 1862, to 90,000*l.* in 1863?—Part of the project at Fort Fareham consisted of a permanent outwork on the north side of the railway, but it was subsequently determined not to construct that outwork permanently, and thus the amount required for the work was reduced.

3041. From the original design, which appears never to have been completed, it would seem that it was intended to construct a keep similar to those at Brockhurst and Rowner. Has the abandonment of that been the cause of the reduction?—No, that was not included in the estimate. The plan estimated for was for closing the rear of the work with a redan and a wall, and covering the wall against reverse fire by a parados.

3042. Would it not have been advantageous if the parados had been made to cover the entrance and bridge as well?—We have included in the estimate a sum for arching over the cut in the parados.

3043. The Commissioners recommended intermediate works between the Portsdown Forts in some cases; has the land been purchased for them?—A belt of land has been purchased throughout the whole extent of the Portsdown Line.

3044. Was your buying a belt of land all the way contemplated by the Defence Commissioners?—Yes.

3045. And then you have clearance rights?—Yes, we have acquired clearance rights the whole way in front of the position.

Hilsea Lines.

3046. In the Hilsea Lines there are casemates for 50 guns, but 25 of those have been blocked up by earth in front; what is the cause of that?—With earthen merlons between each casemate the amount of earth would be too small to afford the requisite amount of protection; and even with temporary revetments between them they would not be sufficient in mass; but with a gun in each alternate casemate, and a merlon between every two casemates instead of between every casemate, the mass of earth is greatly increased; and then at a time of expected attack timber revetments may be employed to retain the merlons, and a more satisfactory arrangement can thus be made for covering the casemates.

3047. (*President.*) Is there any idea that the casemates which are now blocked could be brought into use in case of necessity?—They could, supposing it was considered advisable to do so.

3048. (*Major-General Simmons.*) That is an amount of work you could hardly do in the face of open batteries?—It could scarcely be done if an enemy had already established batteries in front of the lines.

3049. (*President.*) Is the plan of having the embrasures closed a plan which was ever adopted with that view particularly?—What I have generally seen in works abroad, at Lyons and elsewhere, is a merlon between each embrasure, but in such cases the merlons are so small that they are not of much use. After all, the intermediate casemate affords useful bombproof accommodation in the flanks of the work, and the only additional expense that is incurred in making it available for a gun, should it be so required, is the formation of the embrasure, instead of filling it up solid with brickwork.

3050. (*Major-General Simmons.*) What is the earthen slope of the cheeks of these embrasures?—About 45 degrees.

3051. (*President.*) And the amount of fire from those guns you think would be sufficient?—I think that the fire from five guns in casemates would be sufficient for the flanks.

3052. (*Major-General Simmons.*) Especially considering that there are two wet ditches in front, of a formidable character?—Yes, and in front of the most formidable earthwork that was ever constructed.

3053. Are there the means provided of keeping the proper ditch of the work, as contradistinguished from the gunboat channel, full of water?—Yes.

3054. Are there sluices?—Yes.

3055. Is the bridge across that inner ditch intended to be a drawbridge?—It is not. The

bridge over the channel is so wide that it did not appear to be necessary.

3056. What is going to be done with regard to the railway bridge?—The Secretary of State has lately written to the Railway Company, and told them that they are at liberty to go on with the construction of a bridge in lieu of the old existing bridge.

3057. Are the War Department to erect these bridges, or will they be erected at the expense of the Railway Companies?—The Law Officers of the Crown consider that the Government have a right to remove any bridge that the Company puts up, which in any degree prejudically affects the defence of Portsmouth. They think that the Act of Parliament for the railway enables the Government to remove any such bridge. Practically the Government has the power of compelling the Company to make an opening of such width as is necessary for defensive purposes.

3058. (*President.*) At their expense?—Yes.

3059. You say that the Government have the power of making them take away a bridge; have they the power of making them build a bridge according to their wish?—It practically comes to that, because you can say to them, "You must build the bridge so as to meet the requirements of the Government; otherwise it will be removed."

3060. (*Major-General Simmons.*) The present bridge is in a shaky state, is not it?—Yes.

3061. Therefore a reconstruction must take place before long for the purposes of the railway?—Yes; and I believe steps are now being taken for re-constructing it.

3062. (*President.*) And you have sufficient power to force them to construct that bridge with an opening?—Yes.

3063. (*Major-General Simmons.*) Is the present bridge moveable?—There is at present a moveable opening 20 feet wide in the railway bridge.

3064. That is the same span as the turnpike-road bridge, is it not?—No. The moveable opening in the bridge for the turnpike road is 60 feet span.

3065. (*President.*) With reference to that gunboat channel, the question of completing the communication between Langston Harbour and Portsmouth Harbour does not belong to the War Department; the War Department have carried that channel to the extremity of the lines at each end, have they not?—Yes.

3066. Leaving a dam at each end?—Yes.

3067. The question of completing the communication for gunboats between Portsmouth Harbour and Langston Harbour is not a War Department question?—We hold that whatever is necessary for completing the communication, irrespective of requirements for defensive purposes, should be done by the Admiralty.

3068. Is it contemplated to remove these dams on the part of the Admiralty?—No; we shall move the dams, when the defensive works are completed.

3069. At present there is a bank of mud which comes up to here (pointing to the plan)?—The War Department would do the work so far as is necessary for defensive purposes; but anything necessary solely for forming a gunboat channel would be an Admiralty affair.

3070. The object of my question is this: if you were to remove that dam without measures having been taken for obviating it, would there not be a risk of this channel silting up with earth and mud?—When the dams are removed, it is probable some dredging will be necessary from time to time to keep the channel clear.

3071. Is there any plan or proposal for deepening the channel from the extremity of the lines into Portsmouth and Langston Harbours?—There is no plan made for deepening the channel outside the dams. It should be observed that the excavation for the channel does not go below low water mark. When the dams are removed, the material from them will be used, in part, for the formation of the ramparts; and the channel outside would, if necessary, be dredged down to low water, in prolongation of the channel as at present excavated.

3072. (*Major-General Simmons.*) Until it works out to a natural channel of like depth?—Yes; but I should add that all we have provided for in the estimate is the excavation so far as is necessary for defensive purposes.

3073. (*President.*) Therefore, if it was necessary to dredge more, in order to give access for the gunboats to the harbour, that would be for the Admiralty?—I think so.

3074. (*Major-General Simmons.*) Are the removal of the dams, and the dredging that you mention, to work it out until you come to some channel of like depth, included in the estimates?—The removal of the dams is provided for in the estimates; but no provision is made for dredging outside the dams.

3075. Not for dredging out such a channel as you have described?—No sum has been taken for dredging. That would, I conceive, be provided for by the Admiralty hereafter in the Annual Estimates.

3076. (*President.*) Do you consider that any injury was sustained by the ramparts from the length of time that elapsed between the works being suspended, and then being again taken in hand?—No; some few slips occurred, but these are not to be attributed to the suspension of the works.

3077. Would not there, on the other hand, be an advantage in their becoming more consolidated?—Yes; the delay was advantageous as regards consolidation.

Gosport Forts.

3078. The three forts at Gosport that come under the Loan (Fort Grange, Fort Rowner, and Fort Brockhurst), I presume may be considered as finished?—Yes; excepting, of course, the arrangements for artillery on the ramparts, which it is not proposed to execute permanently.

3079. (*Major-General Simmons.*) Those works were carried out strictly according to a design which was made previous to the Defence Commission?—Yes; according to a design made in 1857.

3080. Were they estimated in detail in 1857?—Yes.

3081. (*Colonel Harness.*) Those works have been in contemplation for some years, have they not?—Yes.

3082. (*Major-General Dickson.*) With respect to the expense magazines for these Gosport works, are they not inadequately protected against horizontal fire?—I think, under present circumstances, the proper plan would be to make holes from the bombproofs on the rampart down to the casemates underneath, and then supply ammunition from below.

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3083. (*Major-General Simmons.*) By means of lifts?—Yes; by lifts.

3084. The escarp of Fort Grange is very low, and it would appear that it was intended that the ditch should be a wet ditch, but it does not seem to hold water; is anything intended to be done to supply the water, in order to make the work more secure against a *coup de main*?—No; we were led to believe that we should always get a supply of water in the ditch; but we found that not to be the case, and subsequently a low escarp was added.

3085. Do you remember what the height of that is?—Ten feet. It should be observed, however, that there is a keep, which would enable the work to be held against a *coup de main*, even supposing the outer part of the work to be successfully assailed; *chevaux-de-frise* might, moreover, be placed, and torpedoes be plentifully strewed, over the berm on top of the escarp.

3086. In executing these works, a command has been given to the keep of 7 feet over the main parapet of the main work; was it intended that they should bear any part in the exterior defence of the work?—No.

3087. Then the height of these parapets would discover the position of the keep to the enemy ontside within a moderate range?—If the parapet of the keep were on the same level, or lower than the exterior parapet, the keep would be liable to be seen into from the parapets of the outer work. Besides, it is necessary to cover the rear part of the keep from reverse fire; and you will observe that the front part of the keep is raised above the rear with that view.

3088. The front escarp walls would appear to be exposed to a plunging fire over the parapet in front, there being no glacis or protection?—Yes, to a certain extent, but that plan was advisedly adopted. It was a question whether to provide a glacis in front of the keep, but it was determined not to do so, because such glacis would have prevented our obtaining fire from the casemates in the keep upon the interior of the work. The plan that was adopted was to bring down the earthwork as far as possible, and at the same time to retain the casemated fire. These keeps, you will observe, are not intended to hold out in case the attack was developed on a large scale; they are only intended to resist a *coup de main*. The keep, moreover, acts as a flank to the rear of the works, and the fire from the rear flank guns sweeps the front of each adjacent work, so that you might hold the line against a *coup de main* by the keeps alone.

3089. (*Colonel Harness.*) Do you mean that the rear of the keep becomes a retired flank to the other works?—Yes. (The witness explained the position of the keeps.)

3090. Then they would become retired flanks to the faces of the other works?—Yes; and supposing you had a very small body of men, you could hold the line by manning the keeps and the caponnières of the outer works.

3091. (*Major-General Simmons.*) In the Stokes Bay Lines, a line of parapet has been thrown across the valley of the Alver: was that constructed as a dam?—It was constructed to retain the water in the marsh in front of Fort Gomer. The water is let in from the sea.

3092. I was informed that it is to retain the Alver water?—No; there is a sluice which lets in the water from the sea, and which when closed holds a foot or two of water, in the marsh opposite Fort Gomer. The Alver stream would certainly serve to supply any leakage during the time when the water was low; and, if desired, it might be retained altogether by the construction of a batardeau at either end of the existing dam. The present inundation is tidal.

3093. (*Colonel Harness.*) Up to high-water level?—Up to high-water level; and with that amount of water, and with cuts in the marsh, you would have a very good obstacle in front of the left of the line.

3094. (*Major-General Simmons.*) But the parapet which is supposed to hold the water does not appear to abut against the high ground to the front, and therefore the ditch that is cut there would appear to afford the means of the water getting away?—When the works were constructed, the admission of the sea at mean high tides inundated the Alver Marsh about one foot, which, considering the existing intersecting creeks, and the power of making others, was thought quite sufficient. The idea originally of the Commanding Engineer, General Foster, and previously to that of General Lewis, was to dam up the Alver stream, and they stated that they could get three feet of inundation from that source; but this could not, I imagine, be relied upon in summer.

3095. Was this return in the work (pointing to the plan, made with the idea of its being continued at all?—No, the inundation touches the end of the ditch, and its further extension is unnecessary. The return of the parapet is made for the better security of the communication across the dam.

3096. (*Colonel Harness.*) That would join the inundation (tracing a line on the plan)?—That would join the inundation; and supposing there was no inundation, it would only be necessary to continue the line. This plan shows the idea that General Foster, when Commanding Engineer, had in 1857, and which General Lewis previously had, of the extent of inundation.

3097. I suppose they measured the stream in the summer, did they not?—They must have done so.

3098. Your present plan is to take the water in from the sea; whereabouts do you take it?—There are two sluices in the Stokes Bay Lines which let the sea in.

3099. (*Major-General Simmons.*) What is the provision for letting in the sea-water into this ditch at the right flank of Stokes Bay?—There are two sluices.

3100. What sized pipes are they?—I think they are 15-inch pipes.

3101. (*President.*) These lines were designed at the same time with those (I mean Gomer Fort), and the forts at Gosport, were they not?—They were designed about the year 1858, after the plans of the three forts at Gosport, between Gomer and Elson, had been settled. Fort Gomer and Fort Elson were designed before the three intermediate "Gosport Forts," the one about 1852, the other in 1855.

3102. (*Major-General Simmons.*) If that Alver inundation in front of Gomer is intended to be provided from the sea, would it not be advisable to enlarge the sluices so as to ensure getting it in a moderate time?—I think you may rely upon our having time enough to provide for letting the water in to such an extent as might be necessary.

3103. At high-water spring tides, what would be the average depth of water over that surface; I speak, of course, of tidal water?—About three feet.

(*Adjourned.*)

Tuesday, 16th March, 1869.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President*

Major-General C. DICKSON, V.C., C.B., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.

Lieut. J. C. ARDAGH, R.E., *Secretary*.

Colonel W. F. DRUMMOND JERVOIS, C.B., R.E., further examined.

Col. W. F. D. Jervois, C.B., R.E.

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THAMES FORTS.

3104. (*President.*) Will you have the goodness to inform the Committee what plans it was proposed to put before us for the Thames Forts?—First, there is a set of plans for batteries of a wholly iron-plated casemated construction.

3105. (*Major-General Simmons.*) On one tier?—On one tier.

3106. (*President.*) All the plans are on one tier, are they not?—Yes.

3107. For 28 guns?—Yes; for 28 guns in Coalhouse Fort, and for 68 guns in the three forts together.

3108. We had better take each fort separately?—In the plans to which I am now referring, there are 28 guns in Coalhouse, 20 in Shornmead, and 20 in Cliffe Fort.

COALHOUSE FORT.

3109. Upon what plan is the casemated fort at Coalhouse to be constructed?—The plan is to construct piers with an iron casing, and iron-plated in front. Between the piers will be a construction somewhat similar to the Plymouth Breakwater Fort construction, but modified and strengthened, according to the experience which experiment has shown to be desirable.

3110. Will the roof of the casemates be of the same mode of construction as in the Plymouth Fort?—The roof of the casemates will be of the same construction as in the Plymouth Fort, subject to certain modifications consequent upon the piers forming part of the structure, instead of being, as in the case of the Plymouth Breakwater Fort, separate from the front armour.

3111. What will the thickness of the iron in front of the piers be?—It will average about 12 inches in thickness; but this depends somewhat on an experiment not yet made. We propose to make the pier, in the first instance, complete without the armour, and to place the armour upon it afterwards.

3112. What thickness of iron is the estimate made for; what is your calculation?—The thickness of iron estimated for, as regards the part between the piers, is 24 inches, including supports.

3113. Including in front of the piers?—In front of the piers, 12 inches.

3114. (*Major-General Simmons.*) Are the supports of the plates included in the average of the thickness?—Yes; in the intermediate part it includes the supports.

3115. (*President.*) Therefore, in front of the piers, probably, the thickness would not be quite so great?—No; the thickness estimated for in front of the piers is one foot. The pier affords great additional strength in itself.

3116. I presume, from what you have now said, that the plan of applying an iron protection in front of the piers is not absolutely settled?—The detail is not finally settled.

3117. Is there any plan of interposing any iron concrete between the plating and the masonry?—It has been proposed to interpose iron concrete; but the exact mode in which it would be applied depends on further experiment. We had an experiment the other day upon a target with iron concrete between plates, which gave very satisfactory results; and we propose to make further experiments, with a view of ascertaining the best distribution of the iron concrete between the plates.

3118. (*Major-General Simmons.*) I see in this plan that the piers are surrounded with iron; what is the proposed construction of those piers?—As shown in this drawing.

3119. Are they to be of concrete, or brickwork, or masonry, or of what material?—Of masonry, but with such protection in front that the concrete or brickwork is not likely to be acted upon by shot or shell hitting the pier.

3120. (*President.*) Then what is the object of the iron casing round them?—The iron casing is to keep the material in its place. Without it the masonry would fly out at the back when the pier was struck.

3121. (*Colonel Harness.*) The word "masonry" above included concrete or brickwork, did it not?—Yes.

3122. (*President.*) What would the interior of the piers be?—Either Portland cement concrete, or brickwork in cement.

3123. (*Major-General Dickson.*) What would be the thickness of the iron retaining skin?—Three-quarters of an inch, irrespective of angle-irons.

3124. (*Colonel Harness.*) Is this covering of the casemates by iron or by arch on the roof?—By iron girders and arched plates.

3125. By iron?—Yes; by iron,—then brick arches,—and then concrete.

3126. (*President.*) What is the thickness altogether of the vertical protection?—14 inches of brickwork and 3 feet of Portland cement concrete; making 4′ 2″ inches over the arched plates. Any amount of concrete, up to 10 feet in thickness, might be placed over the brick arch.

3127. (*Major-General Simmons.*) Is the iron envelope to the piers and the iron in the roof included in the average of the iron work for the fort, as stated by you just now?—Not in the average thickness of the ironwork.

3128. (*President.*) These caponnières have been added since the original plan, I think?—It was thought advisable to obtain some flank defence, and the caponnières, as designed, do not interfere with the fire of the guns.

3129. (*Major-General Simmons.*) Are the gorge buildings in this design two-storied or one-storied buildings?—They are two-storied buildings.

3130. (*President.*) They are built, I think?—Yes; at Coalhouse Fort they are built.

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3131. What is the next plan that you put forward for Coalhouse?—The next proposal for Coalhouse is a fort of 12 casemates of a similar construction to the other, besides eight guns on the Moncrieff principle.

3132. The casemated guns would be upon the part of the fort bearing down the river?—The casemated guns would be upon the part of the fort bearing down and across the river where the least lateral range is required; the eight Moncrieff guns would be on the curve of the work, where great lateral range can be obtained down, across, and up the river.

3133. All these works are designed to be built upon the existing bed of concrete?—Yes.

3134. (*Major-General Simmons.*) And upon the existing foundations?—Yes.

3135. On the existing basement storey?—On the existing basement storey.

3136. (*President.*) And it is not proposed to widen the bed of concrete?—No.

3137. Then in this work, I presume, the construction of the casemated portion would be the same as that you have described for the last?—Just the same.

3138. And with reference to the Moncrieff, what would be the thickness of the masonry in front of the pit?—A minimum of 15 feet, and that only at one point.

3139. Of what stone will that be constructed?—It is proposed that the front and top shall be of granite.

3140. And filled up with what?—The hearting will be of less expensive material.

3141. (*Major-General Simmons.*) Will no part of the parapet in front of the Moncrieff be made of concrete, or will it all be made of masonry?—The hearting will be of Portland cement concrete.

3142. Will the relief of the Moncrieff portion of the battery be the same as that of the casemated portion of the battery?—Yes; the top of the work will be on the same level all round.

3143. (*President.*) The guns in firing would be higher, and would come over the top?—Yes; the guns mounted on the Moncrieff principle would be higher, and at the moment of firing would appear above the top of the parapet.

3144. (*Major-General Simmons.*) And the bonnets between the Moncrieff guns will be added to that?—Yes, the bonnets would be projections above the general surface of the work.

3145. Of what materials will those bonnets be constructed?—Of Portland cement concrete.

3146. (*President.*) The bonnet, I apprehend, would stand 4 feet above that level?—Yes; about 4 feet above.

3147. Is the question of bonnets decided, or is it open for further consideration?—It is open for discussion.

3148. You would not propose to adopt any very expensive construction for them?—I would not. For myself, I would rather be without the bonnets.

3149. (*Colonel Harness.*) Where the space is so contracted that you cannot give them a proper thickness?—Yes; indeed I would rather be without them altogether.

3150. (*Major-General Simmons.*) Has this plan been before the Defence Committee, and approved by them as an alternative plan?—This plan has been before them, but the bonnets were not on the plan when it was submitted to them. No plan of superstructure for the Thames Works has ever yet been approved, excepting the wholly casemated plan, which, however, it is understood is open to re-consideration, consequent upon the introduction of the Moncrieff system of mounting guns.

3151. Do you not think that there would be considerable risk from the introduction of those bonnets, from shots or shells striking them, and bursting over the guns?—I do; I think I would rather be without the bonnets.

3152. In fact the bonnets rather re-introduce the system of embrasures on a large scale?—So it appears to me; they were shown in this plan in consequence of criticisms which had been passed with reference to guns mounted upon the Moncrieff system being subject to enfilade when they were above the parapet.

3153. (*President.*) In short, this is an attempt to protect the Moncrieff gun from enfilade, and appears to be a very questionable advantage?—Exactly.

3154. (*Major-General Simmons.*) In the estimates which have been submitted to the Committee for this work, are those bonnets included, and if so, of what material?—Yes, of Portland cement concrete.

3155. (*President*) Does the adoption of the Moncrieff gun involve any alterations in the arrangements in the basement for the magazines and the lifts, and so on?—No; the present basement fits into this plan, except as regards a slight alteration in the positions of the lifts.

3156. Then there will be a lift for every gun, in the case of the Moncrieff?—Yes; there is a lift for every gun, both in the casemated portion, and in the Moncrieff portion; but every alternate lift in the Moncrieff portion, which would otherwise be required for the casemated portion, is not used. The lifts are alternately for shell and powder.

3157. (*Major-General Simmons.*) What thickness do you give to the parados of that right hand gun (pointing to the plan)?—7 feet 6 inches.

3158. Do you consider that that affords an efficient protection to the rear of that gun?—It is a somewhat similar case to that to which we were referring the other day, with respect to Gilkicker.

3159. If it is to be effective as a parados against heavy artillery, it would require to be of greater thickness than 7 feet 6 inches, would it not?—It is provided more with reference to shells bursting in the rear. No doubt it would not resist a direct shot unless plated with iron.

3160. As it is not exposed to direct fire, but only to the chance of shot coming over a parapet of equal height to itself at some distance, do you think it is worth while to go to the expense of giving an iron coating to it?—No.

3161. What is the thickness of the parapet in front of these guns?—The minimum thickness is 15 feet.

3162. At the minimum?—Yes; that is only at one point; the greatest thickness is 26 feet.

3163. (*President.*) Will you describe what the third plan is?—The third plan is to have the guns mounted alternately in casemates, and one the Moncrieff principle; the casemates to be of granite, with iron shields, and a gun on the Moncrieff principle between each pair of casemates.

3164. (*Colonel Harness.*) So that the casemate would be a traverse for the Moncrieffs?—Yes.

3165. (*President.*) In this case the roof over the casemate forms a bonnet?—The roof over the

casemate forms a bonnet, and affords protection to the Moncrieff guns against enfilade fire.

3166. Of what construction will the casemates be; will they be granite with iron shields?—Granite with iron shields; the iron shields however to be carried up to the top of the casemates, somewhat like the construction adopted in the Plymouth Breakwater Fort.

3167. (*Colonel Harness.*) The roof is iron girders and arched plates?—Yes.

3168. (*President.*) The roof will be like the Plymouth Fort?—On the same principle; that is to say, as regards the part of the roof immediately behind the shields.

3169. (*Major-General Simmons.*) In this case will the granite be protected by iron at all?—No; there will be massive granite covering both the Moncrieff gun and the casemates.

3170. Then the casemates would be very similar to the casemates in Garrison Point?—Yes; excepting that they will not be as in Garrison Point, a continuous line of casemates, and consequently the piers will be more massive.

3171. With a large mass of masonry between them?—Yes; with a large mass of masonry and concrete between them.

3172. (*President.*) This plan will have 14 guns?—Yes.

3173. The last had 20, had it not?—Yes.

3174. And the first had 28?—Yes.

3175. (*Major-General Simmons.*) How many of those would be in Moncrieff, and how many in casemates?—Seven in Moncrieff, and seven in casemates.

3176. (*President.*) Have you made a calculation at all of the amount of concentrated fire you would get at any one point with these different plans?—Yes, I have.

3177. I presume that as against one ship you would be able to concentrate a considerable number of guns from this fort?—Yes.

3178. Would you concentrate upon one ship as many in this case as you would with the 28 guns in casemate?—The amount of concentration of fire upon one ship that would be afforded by the second plan would nearly equal that of the first, but that of the third plan would be much less. I call the wholly casemated work the first plan,—the half casemated and half Moncrieff, the second plan,—and the alternate casemate and Moncrieff, the third plan.

3179. (*Major-General Simmons.*) It would depend somewhat upon the position in which you took the ship?—Yes.

3180. (*President.*) Take the ship at figure "S," say 1,000 yards down the river?—At that point the concentration from Coalhouse Fort would be in the first plan 16 guns, in the second plan 15 guns, and in the third plan, 9 guns. The concentration from both Coalhouse Fort and Cliffe Fort together would be in the first plan 28 guns, in the second 26 guns, and in the third 16 guns.

3181. As regards a comparison of the plans, then, as against a squadron of ships, you would bring a much heavier fire from a casemated fort than from a Moncrieff?—Yes.

3182. Have the estimates for these three plans been calculated in detail?—Yes.

3183. And those are the estimates which have been laid before us?—Yes; those are the estimates which have been laid before the Committee.

3184. In all these cases the ditches and caponnières are the same?—Yes.

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3185. The description you have given of these three plans will apply equally to Shornmead and Cliffe?—Equally; the only difference will be in the number of guns.

3186. Do you apprehend that there will be any such difference in the foundations of Shornmead and Cliffe as to make it necessary to adopt any different plan there?—No, I do not.

3187. You think that the concrete foundation put in will be sufficient to carry any one of these plans which may be decided upon?—Decidedly so. Care will be required in carrying out the works, but I feel no doubt that they can be executed so as to ensure perfect stability.

3188. Is there much difference in the distribution of weight in the three alternative plans as to the being nearer the outer ring or nearer the inner ring of the concrete?—There is very little difference in the distribution of weight in the three plans.

3189. With reference to the foundations, therefore, there is no preference to be given to one plan over the other?—I think not.

3190. (*Major-General Simmons.*) What is the reduction in the number of guns that there will be at Cliffe and at Shornmead respectively, consequent upon the adoption of the Moncrieff plan, according to those plans you have now submitted to us?—In the wholly casemated plan, there would be 20 guns at Shornmead and 20 guns at Cliffe. In the half casemated and half Moncrieff plan, at Shornmead, there would be 9 guns in casemates, and 5 Moncrieff; at Cliffe there would be 7 guns in casemates, and 6 Moncrieff. In the third plan (the alternate Moncrieff and casemate plan), there would be 10 guns in each, in equal proportions of the casemate and the Moncrieff system.

3191. Do you contemplate provision now being made for the use of torpedoes, as subsidiary to those batteries for the defence of this part of the river?—I certainly contemplate the use of torpedoes in connection with these works.

3192. Then do you think that the reduction in the number of guns is of that importance which it would have been when the batteries were originally designed?—No, I think not; I think that the additional power that torpedoes afford for the defence of channels such as the Thames admits of a reduction in the number of guns being made, as compared with what were originally contemplated.

3193. Do you make any provision in the two most advanced forts, Coalhouse and Cliffe, for bringing torpedo arrangements into them?—There is no necessity in cases like this for a special arrangement for bringing torpedo wires in through the outer wall of the fort on the river side; they may be brought in through the rear.

3194. Through the gorge?—Yes; this is obviously a different case from that of the forts at Spithead, where the works are in the middle of the sea, and are of equal strength all round.

3195. (*Major-General Simmons.*) Are the gorge buildings at Cliffe and Shornmead now two-storied buildings or one-storied buildings: that is to say, are they to be so according to the plans which you submit to us?—Two-storied buildings, brought up to about the same level as the top of the casemate.

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Dover.

3196. In the Schedule attached to your Report, dated February 1867, there were 16 shields apparently provided for at Dover, whereas now there are none; where were those shields intended to be erected? what was the idea at that time?—The idea at that time was to place some shields in Arch Cliff Fort, and at Guildford Battery under the Castle; but whatever heavy guns would now be mounted in those works should I conceive be mounted on the Moncrieff principle.

3197. Did the Estimate for 1867 provide for the necessary works in the batteries for placing those shields?—The Estimate laid before Parliament, in 1867, was for providing and fixing shields, not for the shields alone. You will find, in the schedule of 1867, the item is for "Providing and "fixing iron shields."

3198. (*President.*) Can you furnish the Committee with the date of the approval of the magazine arrangements by the Artillery authorities?—Yes.

3199. I mean the date when you took them as the guide?—As regards open batteries, the magazine arrangements at the new works at Southsea (which were subsequently adopted as the type to be generally followed) were submitted to and approved by the Defence Committee and Fortification Committee,—of which Major-General Bloomfield, Inspector-General Royal Artillery, Colonel Bingham, Deputy Adjutant-General Royal Artillery, and Colonel (now Major-General) Collingwood Dickson, Royal Artillery, were members, on the 24th October, 1862. The present arrangements for magazines in casemated batteries were first laid before the Fortification Committee, of which Brigadier-General (now Major-General) Lefroy, Royal Artillery, is a member, on the 4th September, 1865; and after that, we took them as our guide, and introduced them into the several designs for works approved by the Defence Committee. Subsequently,—first on 30th July, 1866, and in further detail on 7th February, 1867, the arrangements both for open batteries and for casemated batteries were examined and concurred in by the Artillery authorities, to whom I have referred in my previous evidence.

Pembroke.

3200. (*Major-General Simmons.*) The estimate for Hubberstone was increased in the Schedule to the Act of 1863 from 35,000*l.* to 55,000*l.*; was that in consequence of a change in the plan?—A considerable addition to the cost both of Popton and Hubberstone, was occasioned by additional expense in the construction of casemates beyond what was first contemplated. The first estimates were of an approximate character, and were not found to meet the expenditure necessary for the completion of the works, according to the plan as finally determined upon.

3201. At Hubberstone there is an entrance into the work across the ditch, close down to the casemated battery, but no provision is made for providing for a drawbridge for it; do you not think that it would be very desirable to have a second entrance there: that is to say, to retain that, as it has been made as an entrance, with a proper drawbridge?—My idea about that entrance was that it was advisable to have it for ordinary times, but that at a time of expected attack you would remove the bridge, and be content with the upper entrance only.

3202. Would not it be a great matter of convenience in the defence, and also for getting the guns and ammunition, and provisions and everything else, into the work, as they would come by water principally, to keep that open?—Another drawbridge might be of advantage; it would be a small additional expense, which might be provided for at any time.

3203. (*President.*) You do not think it necessary to provide it at present?—I do not think it necessary to provide it at present; it might be introduced at any time as an item in the ordinary Annual Estimates.

3204. The original estimate for Fort Scoveston was 76,000*l.*, and it was reduced in 1863 to 50,000*l.*; was that in consequence of a reduction in the plan?—A considerable reduction was made in carrying out the design for the work.

3205. (*Major-General Simmons.*) Had there been any approved plan previous to 1862 upon which that estimate of 76,000*l.* was based?—There was a general plan approved in which there were a great many more casemates than in that finally carried out.

3206. Then, in fact, the modification was the omission of the casemates?—Both the omission of the casemates, and the omission of an escarp wall, which, owing to the nature of the excavation, was found to be unnecessary. The escarp wall, as carried out is a mere facing. All that was found necessary was to protect the scarp from the weather; that caused a great saving.

3207. Has the plan which has been before the Committee for work at Chapel Bay been approved by the Defence Committee?—It has not yet been approved.*

3208. It is merely a project in its present state?—Yes; but it is a plan on which an estimate of the expenditure necessary for a battery at Chapel Bay can be founded.

3209. (*Colonel Harness.*) And in its present form it embodies suggestions made by the Committee when a former plan was submitted to them?—Yes.

3210. (*President.*) So that you have no doubt that the sum now taken, 13,754*l.*, will be sufficient to provide such a work as is required in that position?—I have no doubt of that.

3211. (*Major-General Simmons.*) That plan is for a battery en barbette, with the possibility of adapting it afterwards to the Moncrieff system?—It is drawn for the Moncrieff system; the estimate to which you refer for the barbette plan is made on the hypothesis that the Moncrieff system might not be applicable to the larger description of guns.

3212. (*President.*) And the estimate which is sufficient for one would be more than sufficient for the other?—Yes; the estimate for the work on the Moncrieff system would be more than sufficient for the work if carried out on the barbette system.

3213. (*Major-General Simmons.*) The estimate of 13,754*l.* is for the guns en barbette, but if it is completed on the Moncrieff principle, there will be an additional 708*l.*?—Yes.

3214. In the Schedule of the Act of 1865, and also in your Report of February 1867, the defences in the bays to the southward of Milford

* This plan has since been approved by the Defence Committee.—W. F. D. J.

are estimated at 80,000*l.*, and in the Schedule of the Act of 1867 the estimate is reduced to 50,000*l.* Is that in consequence of any change of plan?—No; it is in consequence of my having gone further into the question, and found that they can be done for 50,000*l.*

3215. (*President.*) With works of less extent than you originally contemplated?—Yes; 50,000*l.* will amply suffice for the works required for the defence of those landing-places.

3216. (*Major-General Simmons.*) Will that 50,000*l.* include the iron shields that may be necessary for them?—No. A further sum of 6,000*l.* is included for that purpose in the estimate for iron shields.

3217. I find that in the Report of the Defence Commissioners they recommended that the works should be begun as soon as possible, and that, with a view to that, as soon as the general designs had been decided upon, and the land obtained, contracts should be made for the building of the escarp and counterscarp walls and the excavations, and that in the meanwhile the detailed drawings and specifications for all the remaining portions of the work should be prepared; was that the course adopted?—That was the course adopted.

3218. So that as soon as the first contract was made for the escarps and counterscarps (take, for instance, Fort Nelson, where the contract price was 34,260*l.*), the detailed plans for the remainder of the designs were then put in hand?—Yes.

3219. And was the estimate that was laid before Parliament in 1862 or 1863 framed upon those detailed estimates?—In 1862 it was framed upon those detailed estimates wherever we were in a position to do so.

3220. (*Colonel Harness.*) As soon as you had a general plan for the contour of the fort you prepared the plan for the details?—Yes.

3221. You prepared the details as soon as you could?—Yes.

3222. (*President.*) And no work was undertaken without having careful detailed estimates made?—No work was undertaken without careful estimates being prepared. The estimates were not in all cases what are technically called "detailed" estimates, but were in some instances approximate estimates based upon data previously ascertained to be reliable.

3223. (*Major-General Simmons.*) Were careful detailed estimates made of Purbrook and its outworks, including all those works which have now been omitted?—The contract for those works was purposely made so as not to necessitate our doing the whole of the works shown in the drawings to which you refer.

3224. It is not a question of contract, but a question of estimate; were they estimated at that time in detail, including all those works which have now been omitted?—The estimates for Fort Purbrook and outworks were estimates such as I have just referred to, the basis being the actual contracts for adjoining works of a similar character.

3225. But it appears that there is excess even at the present time, though the barracks and flanking defences of those outworks have been omitted. Therefore, it would appear that your estimate then must have been very deficient in amount as regards those works?—No, the expenditure on Fort Purbrook and outworks, according to the present plan, will not be in excess of the estimate of 135,000*l.*

3226. (*President.*) Even in 1867 I find that your estimate was 50,000*l.*, and now it is 62,000*l.*?—That is on the whole of the works on the outer line of land defences of Portsmouth. In 1867 it was considered advisable to limit the estimate for this outer line, which includes the Portsdown Position and Fort Fareham, to what would be absolutely necessary to render the works *substantially* complete, leaving for future consideration the preparation of the buildings for the occupation of troops and the carrying out of anything that could be regarded as supplementary, such as the formation of the outworks to Fort Purbrook.

The following items, which have been included in the estimates laid before the Committee, were not included in the estimates for 1867.

	£	£
Outworks of Purbrook		31,402
Barrack fitments at Purbrook, Widley, Southwick, Nelson, and Wallington..		11,449
Fareham :—		
Parados	3,790	10,527
Deepening ditches, &c. ..	2,546	
Making up parapet and glacis	3,000	
Archway through parados ..	400	
Iron railing	381	
Entrances to haxos	410	
Wallington :—		
Defilade of *chemins des rondes*	2,135	3,182
Strengthening escarps and counterscarps	1,010	
Papering officers' quarters ..	37	
		£56,560

Comparing the subsequent expenditure and the present estimates with the estimate of 1867, there is, however, an actual excess of about 6,000*l.* upon the estimate of 1867. This has been caused partly by unforeseen expenditure at Fort Wallington, through difficulties experienced in dealing with the earthworks and revetments in the London clay soil, and partly through the work at Fort Fareham having proved more expensive than had been ahticipated.

It will, of course, be for the consideration of the Secretary of State in this, as well as in other cases, whether or no it is desirable to make application to Parliament for funds for some of the items included in the estimates, which have been laid before the Committee.

3227. Then I am correct in understanding that although the original estimates which were laid before Parliament were necessarily general estimates, no work was ever undertaken without a careful detailed estimate being made, and so accurately as it could be made?—Yes; as accurately as the circumstances would permit at the time.

3228. (*Major-General Simmons.*) That detailed estimate being a complete estimate of the whole work?—Yes.

3229. Were estimates made for the completion of the plans which were approved by the Queen?—Those plans were not on a scale on which accurate estimates could be framed.

3230. They were outline plans, from which detailed plans could be made and estimates could be prepared?—The plans to which you refer were not made as working plans, but as giving a general idea of the kind of work which was contemplated, and the estimates made from them could only be of an approximate character.

3231. (*Colonel Harness.*) They could not be referred to for dimensions of masonry?—They

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could not be referred to for dimensions of masonry or for details.

3232. (*Major-General Simmons.*) But if a plan submitted and approved in that way would be much more costly to carry out than the sum appropriated for that particular fort, and if, therefore, you had to provide money for its construction, would it not have a tendency to diminish other works in other places?—If we found that we were likely to incur more expenditure than we had anticipated in one place, it became a question for consideration whether we could not meet such excess by a reduction of expenditure in another place, and it was always a matter of discussion whether such reduction, when proposed, might properly be made.

(*Adjourned*).

Monday, 19th April, 1869.

PRESENT:

Admiral the Hon. Sir F. W. GREY, G.C.B., R.N., *President.*

Major-General C. DICKSON, C.B., V.C., R.A.
Major-General J. L. A. SIMMONS, C.B., R.E.
Colonel H. D. HARNESS, C.B., R.E.
Colonel T. ELWYN, R.A.

Lieut. J. C. ARDAGH, R.E., *Secretary.*

Captain ALEXANDER MONCRIEFF, examined.

CLIFFE FORT.

Captain A. Moncrieff.

19 April, 1869.

3233. (*President.*) The Committee wish to know whether you have any remarks to make upon the plans which have been laid before them for the alteration of Cliffe Fort. This plan, which is now before you, shows a battery, one-half of which is constructed for casemates, and the other half for six guns upon your system; have you examined this plan?—After my last interview here on the 14th, I examined these plans, and I have gone into the matter as well as I could. On examining the plans I find that the principal advantages which are to be got from the application of my system are entirely lost in all these adaptations; for the following reasons. The parapet is exposed (as seen in section) above the top of the glacis, and becomes, on looking towards the forts, the most prominent object in the whole landscape. As that parapet must be made strong enough to resist shot in as small a width as possible, that makes it a very expensive adaptation; whereas, if the glacis and the top of the parapet were in one line, the work would not be so visible to an enemy, and therefore would be more difficult to attack; its strength would be received from the ordinary surface of the ground, instead of putting up a high and artificial parapet to protect the guns. Also in looking at this work of Cliffe, and indeed also another upon the same side of the river (Shornmead), I see that the principal face, and the only face which would be attacked, is in such a relative position towards these guns of the Moncrieff batteries, that long-range fire directed at that face would take these guns in reverse, for which they are very badly adapted. They are not suited for this, being open at the rear; and the ground here I understand is marshy, and would make the erection of a parados a very expensive and inconvenient arrangement.

3234. You are not to consider this as the application of the system to a work altogether new, but the adaptation of it to a work partly completed; have you taken into consideration the present state of the works in this fort?—I have seen the works, and I must say that I feel it would be a difficult thing to adapt them, especially where you have a combination of the two systems, because the one does injustice to the other.

3235. (*Major-General Simmons.*) Would there be less difficulty in adapting the works entirely to your system than in combining your system with casemates?—Certainly, because you could then have the parapet protected by a glacis.

3236. (*President.*) Do you mean that you would lower the whole parapet to bring it under the cover of the glacis?—Rather. I would not raise it.

3237. I mean you would lower it as compared with this plan; you would put your gun at a lower level?—Yes, at a lower level; but I think this part would be always dangerous, because the first fire would be delivered at long range upon the other face, and the guns looking up the river would therefore be exposed in rear. As you requested me to consider this, and to give you my opinion in writing, I have put my ideas into the form of letter addressed to you, which I have with me.

3238. Will you read the remarks you have made?—"Sir,—In consequence of the request "made on the 14th inst. that I should look into "the proposed designs for adapting my system to "the forts on the Thames and elsewhere, and give "you my opinion on the 19th inst., I have con- "sidered the matter as far as the short time given "me would allow, and am of the following "opinion, namely,—that by the adoption of the "proposed plans, the principal advantages of my "system are entirely lost."

3239. What plans are you alluding to now?—Both the alternative plans. "The raising of the "crests of the parapets to such a height above the "ground level precludes the idea of concealment "by making these batteries the most prominent "object in the landscape. The construction of a "parapet in so prominent and exposed a position "necessitates its being *per se* shotproof in as little "width as possible, thus entailing great expense "for every gun mounted. To obtain the desired "results, the muzzles of the guns should be as "near the surface of the ground as possible, "whether that surface is natural or artificial, so "that no exposed parapet to cover the gun is "necessary. In some cases the works are of such "a form as to render it difficult to protect the "guns, in the adaptations referred to, from "enfilade, from slant, or even reverse fire. In "conclusion, I would respectfully submit that a "hybrid fort, partly on my system and partly on "another, is unsatisfactory to both systems. If

"thought desirable, I am ready to submit plans "for the placing in position of any number of "guns in the vicinity of the present sites, the "works to cover which would not exceed "840*l.* per gun. I have the honour to be, Sir, "your obedient servant, A. MONCRIEFF."

"Pursuant to request made on the 14th inst., "I give the following opinion on the proposed "adaptations of my system to the Thames works, "which I have considered as well as the time "would admit. Having explained the plans for "the adaptations referred to, I am of opinion "that,—1st. The principal advantages of the new "system will be entirely lost by raising a parapet "of limited strength above the glacis, and thereby "making the position of the batteries the most "prominent object in the landscape. 2nd. That "the expense attending that construction is un-"necessary. 3rd. That those parts of the works "proposed to be armed with Moncrieff carriages "in one of the designs are not available in that "direction from whence the attack will be re-"ceived, and will in some cases be taken in "reverse by long-range fire directed at the other "and more important part of the works. From "this fire there is no protection, and the nature "of the ground would make it expensive and "inconvenient to supply parados, if it was con-"sidered worth while to do so. 4th. That in one "of the alternative plans which it is proposed to "place gun-pits on the important faces, a reduc-"tion of the number of guns is designed, which "is not necessary."

3240. Then I understand that you do not think that it would be advisable to change the case-mated plan into a plan partly casemated and partly on your system?—In these cases I think not, to the best of my judgment.

3241. (*Major-General Simmons.*) Do you think you could adapt the works, in their present condition, for guns on your system entirely?—I think it would be a much better adaptation than if made half on one system and half on the other.

3242. (*President.*) Have you considered at all what number of guns you would get if you adapted the whole battery to your system?—These faces are the most important ones (pointing to the plan).

3243. (*Major-General Simmons.*) Looking down the river?—Those faces looking down the river could not be enfiladed from the water, because their prolongation is straight across the river, which is narrow. One traverse there is therefore as good as two or three in a place exposed to enfilade at long range. Therefore more guns might be mounted than is shown in the plan with alternate casemates.

3244. Alternate guns and alternate traverses?—Yes.

3245. (*President.*) Would you have two guns to each traverse?—I should in that case, because they are wanted, and are not subject to enfilade.

3246. (*Major-General Simmons.*) Do you consider that you might even have three between the traverses?—You might have three, without any undue exposure. Supposing that to be the face (drawing a sketch), in order to enfilade these guns the vessels must be on that line, which is very confined indeed, and at very short range, consequently a very few traverses would completely protect the whole of the guns from flank enfilade.

3247. (*Colonel Harness.*) How close do you contemplate putting your guns when they are under the most favourable circumstances? what distance apart would they be?—They, if required, might be so close in that case as merely to leave room sufficient to work the gun; but in general I should always recommend them to be separated as much as possible.

3248. What distance have you made that out to be from centre to centre of the gun?—I have not gone into the matter sufficiently to be able to say.

3249. (*Major-General Simmons.*) Would not the distance of the gun from centre to centre depend, to a certain extent, upon the lateral range of the particular battery upon which they are to be mounted?—It would, in this case, depend entirely upon that condition.

3250. Have you had time to consider the amount of lateral range required with reference to these particular forts in the Thames, so as to make out what the distance of the guns from centre to centre should be?—I have not had time to consider it.

3251. (*Colonel Harness.*) If full advantage is to be taken of your system, of course you would allow great lateral range to every gun?—I should, but in a case of this kind there is no use for it, and at the same time I understand it is desirable to place as many guns here as there is room for.

3252. (*Major-General Simmons.*) The lateral range in this case is restricted by the breadth of the channel?—It is restricted by the breadth of the channel. Where great lateral range is not required the guns can be brought closer together.

3253. When you were referring to the small lateral range required, you were referring to the faces which look down the river, I presume?—Entirely.

3254. If these works were altered by placing guns mounted upon your system in rear of the present line of casemates, do you consider that it would be necessary to place concrete foundations for your guns to traverse upon?—No; and I believe that one of the advantages belonging to my system is, that of being able to dispense with such foundations in laying the guns. The gun platforms can be laid in the same manner as a railway.

3255. So that if there was any slight settlement you would adjust it by packing?—We should adjust it as it settled by packing.

3256. (*President.*) In that case it would be necessary to have the platform entirely upon the concrete or entirely off, I presume?—Yes.

3257. You could not have it half on and half off the concrete?—It would not be desirable.

3258. (*Colonel Harness.*) Have you formed any idea as to what the weight of the gun carriages would be in proportion to the weight of the gun?—It would be, including the gun, about three times the weight of the gun.

3259. (*Major-General Dickson.*) Do you think that your plan is feasible on such exceptionally bad foundations as we have in these forts?—I think it is very well adapted for such cases; and for positions where the marsh is still worse, I have been designing an iron caisson in which the gun-carriage would as it were float.

3260. (*President.*) This plan shows the fort (another plan was laid before the witness)?—If the superstructure in this plan was reduced to 6 feet of concrete, it would reduce the expense, by dispensing with the upper part of the parapet, and also of the upper part of what is in rear. Besides, the whole weight, which would be

Captain A. Moncrieff.

19 April, 1869.

very great for that bad foundation, would be reduced.

3261. (*Major-General Simmons.*) In fact, if I understand your answer rightly, with reference to the former plan, if the battery was modified entirely upon your system, you think that by placing 6 feet of concrete over the present casemates you could mount your guns efficiently behind them?—I do; and of course the expense would be much smaller, and the glacis would not require to be raised so much.

3262. (*President.*) As I understand you, the result is that you do not think that a battery partly casemated and partly upon your system would answer in that position?—What I wished to state was, that a battery partly casemated and partly upon my system would not be calculated to do justice to either the one system or the other in that position.

3263. It is not a question of which system is the best, but whether we should get a fort there that would give the resistance you require to the enemy, and would be an advantageous work there. I do not want to compare the one system with the other, but could a fort upon that system be advantageously adopted?—If you make this combination, in order to suit my system to the casemate system, you have to increase the expense very much indeed; and you have also to increase that sort of exposure which I consider it is one of the greatest advantages of my system to take away.

3264. If you adopted the wholly casemated plan, you would have a much more expensive plan still. It is not a question of what might be the cheapest if you had to begin a new fort; it is a question between a wholly casemated plan and a partly Moncrieff and partly casemated plan?—I consider that it is not only a matter of expense, but it is also a matter of efficiency, because if you raise the parapet in that manner you show the position of your guns to an enemy, and expose a vulnerable parapet to be attacked.

3265. I do not quite see the difference in that. This parapet does not show the position of the guns more than if the guns were placed behind?—It is more visible than a glacis.

3266. (*Colonel Harness.*) You contemplate your system being used upon the terreplein of the existing works?—I think where that is desirable, it will of course rank with other plans of mounting artillery.

3267. As one mode of mounting artillery upon works?—Yes; but when you place my guns behind a raised and narrow parapet, you lose a great part of the advantages of the system.

3268. Of course you would have to place them, in many cases, in situations where the parapets would be as much seen as they are now?—I suppose so, but would like to know what cases you refer to.

Southsea.

3269. (*President.*) We next turn to the Southsea Battery, and the plan for adapting part of that battery to your system. Have you examined it?—I have not examined that plan.

3270. (*Major-General Simmons.*) Have you ever seen it before?—I do not think I have seen it before.

3271. (*President.*) In this case there are two and three guns together between the traverses. This is the existing work where the parapet is already formed, and you would be limited in adapting it?—That appears to be a very good plan in this case (the proposed adaptation having been shown the witness). I should like very much to have an opportunity of studying the plans and seeing the places where my system is to be applied, because there might be some adaptations that would occur to me that might not occur to those who are not so well acquainted with the system as myself.

3272. (*Major-General Simmons.*) Have you been employed with the officers of the Fortification Branch in getting out a normal design for a battery which should be adapted to your guns?—I have, for 7 and 9-inch guns.

3273. Has that any reference to a particular site?—It was with reference to Gibraltar, and I also understood it to be for general application.

3274. (*President.*) I observe that upon this plan you place the gun in a domed pit?—I do.

3275. Is that the plan you propose to adopt generally, or only in cases where a gun would be exposed to a reverse fire?—I propose to make it general, except under particular circumstances, for three reasons, viz., because it gives splinter-proof, indeed almost bomb-proof, cover to the detachment who work the guns principally in front; because it is a very strong form of construction, as it is an arch both ways, and because it contracts the horizontal exposure: in other words it contracts the radius of the pit or gun recess about 2 feet.

3276. The gun detachment would be better protected against shells bursting above the gun-pit?—The men would be as well protected against rifled shells as if they were in a regular bomb-proof. But this is not a good specimen; in a plan for the 9-inch gun you will find it is better, as the plan before me has only a 10 foot parapet.

3277. What is the width of the opening in a complete dome?—This is not a complete dome. The opening in front is about 19 feet in diameter. The way in which it is formed is this:—This front part is a circle with a radius of 9 feet 6 inches, and then the remainder, which sends off the arch to this abutment, has a radius of 20 feet. The arch ends at the traverse, but where it does cover the men the protection is complete. They stand under cover and have space enough for laying down side-arms, and so on. There is a passage of 2 feet here. These passages into the magazines are between the guns.

3278. In this case do you propose also to have some with a complete dome, or complete circles?—In those cases where the Moncrieff pit is to take the place of a cupola, a complete circle would be formed; but in ordinary batteries this would represent the form (describing the same).

3279. That would be open in the rear?—Yes.

3280. (*Major-General Simmons.*) In fact, an arrangement of that sort is nearly what you would propose for situations such as that at Southsea?—Precisely.

3281. (*President.*) In fact, for any case where a battery is not exposed to enfilade or reverse fire?—This would be protected from enfilade to a considerable extent.

3282. (*Colonel Harness.*) Have you estimated the additional expense of any works constructed in that manner, as compared with the straight wall plan?—These estimates are entirely in the hands of Captain Siborne, R.E., who has assisted

me in making these arrangements, and who has given me all the information I possess, and have asked for, regarding the adaptations.

3283. Have you formed any estimate of the relative security of the two forms: the one with a dome, and the other with a straight wall?—I think that security might be determined by inspection. In the dome form the crest, or rather the upper part of the interior slope, is brought nearer to the centre of the platform, and the part covered by the dome becomes a shelter for the men; and by the arrangements of the carriage, a great deal of the work can be done by the men standing under that cover.

3284. (*President.*) If you had a straight wall, where would it come upon that plan?—It would be halving the difference. That pit, I think, is 19 feet at the top, and the straight one we have had made is 23, so you save 4 feet in diameter.

3285. There is very nearly the same amount of brickwork and masonry in each case?—Very nearly the same. There is a slight addition with the dome, which would be a little more expensive, but not very much.

3286. (*Major-General Simmons.*) I understand you to say that you have visited the Thames Forts, and seen them in their present state, before giving the opinion you have expressed to us to-day?—Yes; I have confined my positive opinion to the Thames Forts, because they are the only ones that I have had an opportunity of inspecting.

3287. (*President.*) Have you inspected them lately?—Yes; I have inspected them since I received the request of the Committee.

3288. (*Major-General Simmons.*) In fact, you have inspected them this last week, have you not?—I have.

3289. (*President.*) Which do you refer to?—All three of them;—viz., Coalhouse, Cliffe, and Shornmead.

The witness withdrew.

(*Adjourned.*)

The following letter was subsequently received from Colonel Jervois, and is inserted here in accordance with his wish:—

Sir, *War Office*, 11*th May*, 1869.

Having been furnished with a copy of the evidence of Captain Moncrieff, who was the last witness examined by the Committee on Fortifications, of which you are President, I find in that evidence statements, respecting some of the plans made under my directions, which are calculated to produce erroneous impressions as regards the proposals of the Fortification Department for applying his system of mounting guns.

The statements to which I refer would appear in a different light if evidence were taken respecting them from an officer responsible for the plans.

I therefore have the honour to request that I should have an opportunity of affording explanation, either personally or by letter, to the Committee, with reference to Captain Moncrieff's observations; or, if the Committee find it inconvenient to append any further evidence to their Report, that this letter should be published immediately after Captain Moncrieff's evidence, in order that it may be clearly seen that the evidence taken by the Committee on this part of the subject into which they have enquired has been left incomplete.

I have the honour to be,
Sir,
Your obedient Servant,

Admiral Wm. F. Drummond Jervois.

The Hon. Sir F. W. Grey, G.C.B.,
President of the Committee on Fortifications
&c. &c. &c.

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REPORT OF COMMITTEE

APPOINTED TO CONSIDER

CAPTAIN MONCRIEFF'S LETTER

OF

5TH DECEMBER, 1868.

Presented to both Houses of Parliament by Command of Her Majesty, 1869.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS, ST. MARTIN'S LANE.

MDCCCLXIX.

(1522)

Report of Committee appointed to consider Captain Moncrieff's Letter of 5th December, 1868.

THE Committee appointed to consider the various statements made by Captain Moncrieff with reference to his invention for mounting guns, in a letter addressed by him to the Secretary of State for War, dated the 5th December, 1868, have the honour to report that they assembled on the 22nd December, and subsequently by adjournment, and that Captain Moncrieff has attended before the Committee, and given full explanations as to those statements. The Committee have carefully enquired into them all, and have now to report as follows, taking each statement in succession.

Captain Moncrieff urges that—

1. "After many years' work I left all my "own affairs in Scotland, and devoted my time "since the 13th August, 1867, exclusively to "the service of the Government."

1. The Committee are satisfied that the elaboration by Captain Moncrieff of his system has occupied his attention for several years, and that since the 13th August, 1867, when he first came to Woolwich to carry into effect the decision of the Secretary of State for War to try his plan with a 7-ton gun, he has been constantly employed in making the necessary drawings, in superintending the manufacture of the carriage for that gun by the Royal Carriage Department, and in attending the experiments therewith.

The Committee, however, consider that Captain Moncrieff has derived great benefit by the experiment being made at the expense of Her Majesty's Government, aided by the skill and experience of a War Department factory, the special duties of which are the manufacture of gun carriages, and that at least as much time would have been spent if he had made this experimental carriage at a private factory, with the view of introducing his system to the attention either of Her Majesty's Government, or to that of the Government of any foreign country.

2. "I have, at the request of the Govern- "ment, manufactured for them a Moncrieff "Carriage for that class of gun which they "themselves selected to test my invention, "viz.: a 7-ton 7-inch muzzle-loading Wool- "wich gun."

2. This, the first experimental carriage on Captain Moncrieff's system, was manufactured by the Royal Carriage Department, under Captain Moncrieff's superintendence.

3. "On the 19th May, 1868, the new car- "riage was tried with success before the "Ordnance Select Committee."

3. This trial took place at Woolwich, on the 19th May, 1868, as stated by Captain Moncrieff, and so far as it went was a decided success, but it was only preliminary, having been intended to test the strength of the carriage in all its parts, prior to its being sent to Shoeburyness for the more searching trials to which it was there to be subjected.

This preliminary trial led to modifications in the details of the carriage, owing to which, and to other causes, the further and final trials were postponed, so that they were not completed before the end of October, the Report of the Ordnance Select Committee thereon being dated the 14th November, 1868.

4. " At that time, and ever since, I have " urged the expediency of enabling me to " manufacture a 12-ton gun carriage. I have " been invariably defeated in this attempt, " and now, more than six months after the " first trial, the thing remains much in the " same state as it was then."

4. Captain Moncrieff, by letters dated the 28th and 31st May, 1868, urged the expediency of at once making preparations for the manufacture of a carriage for a 12-ton gun, and applied for a draughtsman to assist him in making the necessary designs; in reply to which, on the 10th June, he was informed that it was not desirable to enter upon the construction of any more carriages until that for the 7-ton gun under experiment had been fully tested. This decision, however, was so far modified that on the 30th June, pending the completion of the trials of the 7-ton gun carriage, Captain Moncrieff was offered the assistance of a draughtsman, which, considering the then near approach of the experiments at Shoeburyness, he declined until after those trials should have been made. A subsequent difficulty occurred relative to Captain Moncrieff being granted the assistance of draughtsmen, which appears to have arisen from a misunderstanding caused by verbal communication, in the absence of any written application by Captain Moncrieff, and consequently of any authority, for the assistance he required. This has since been explained to Captain Moncrieff, who has expressed himself satisfied that his impressions arose from a misunderstanding.

In reply to a request made by Captain Moncrieff that he might be allowed to reconsider the adaptation of his carriage in each case to guns of different natures, as he could not guarantee the success of any experiment not carried out by himself, he was informed, on the 17th November, 1868, that all drawings of his carriage should be made under his supervision, and no alteration permitted without his concurrence.

Subsequently, on the 27th November, he was informed that the drawing for the carriage for the 12-ton gun was finished, and that no working drawings were considered requisite. The present position of the case is that the construction of a carriage for a 12-ton gun was approved on the 3rd December last, but that all proceedings with reference to it have been postponed pending the report of this Committee.

5. " I have asked for acknowledgment of " success with the first carriage; it is not given " me. I have asked for the Report of the " Ordnance Select Committee; I cannot get " it."

5. A copy of the Minute of the Ordnance Select Committee, of the 9th November, containing an account of the actual experiments with the 7-ton gun carriage, was sent to Captain Moncrieff, but he was refused a copy of the Report in which was expressed the opinion of the Ordnance Select Committee thereon. That Report, dated the 14th November, had not at that time been submitted to the Secretary of State for War, and since then the change of government, and the decision to refer the whole question to a Committee, have retarded further action.

6. " I have applied for draughtsmen to ex- " tend my designs; they are not allowed. " While the works of fortification have been " stopped for months for my invention, and " other manufactures employing hundreds of " men held back for it, I am not allowed the " control of a single draughtsman to prepare " the important designs on which the whole of " the contemplated changes hinge."

6. This has been considered in the Report on No. 4 above. The Committee, however, have to observe that they are assured that no inconvenience has as yet resulted from any works of fortification being stopped.

7. " While Committees are considering the " changes which my invention will produce, I " have not seen a single plan on which their " decisions are taken. And I know that " Engineer Officers, who do not know the forms of my carriage (as these forms have not yet

7. Captain Moncrieff has publicly acknowledged, and before the Committee has repeated his acknowledgment of, the support he has received from the Deputy Director of Works for Fortifications, which also appears upon the official records.

" been submitted), nor one half of the applica-
" tions of which the system is capable, have been
" employed to design batteries for it, which bat-
" teries I have not been consulted about, have
" never seen, and which possibly may be in-
" applicable. You cannot, Sir, wonder at my
" feeling aggrieved at the helpless position in
" which I am placed, as I cannot be unconscious
" of the attempt to ignore the only person who
" is able to give proper and necessary informa-
" tion, and who has a right to be consulted."

His complaint is, that his application to be placed in communication with the Defence Committee has not been granted, and that he has received no official request to place himself in communication with the Director of Works. On this subject the Committee have to report that the Deputy Director of Works had, on the 1st December (previously to the date of Captain Moncrieff's letter, and therefore to the appointment of this Committee), recommended that Captain Moncrieff should be put officially in communication with his Department, but no step had been taken to carry this recommendation into effect when Captain Moncrieff's letter of the 5th December was received, and since that time the whole question has been referred to this Committee. The statement that Committees were considering the changes which the adoption of his system will produce is substantially correct, designs having been prepared by the Works Department, submitted to the Defence and Fortification Committees, and (subject to the reservation that the application of the Moncrieff carriage is dependent upon the result of trials with guns of a weight of 12 tons and upwards), recommended by those Committees for adoption. Subsequently these plans have been laid before the "Committee of Enquiry relative to Fortifications," accompanied by estimates for their execution.

8. " There are several other points besides
" those above referred to which add to my
" difficulties, and I cannot too strongly urge
" that you will be pleased to order a full
" enquiry into the whole subject."

Captain Moncrieff having been requested by the Committee to state the "other points" to which he referred, enumerated them as follows :—

a. He complained that foreign officers have been allowed to be present at experiments with his carriage, without due notice having been given to him of the experiments at which such officers were present.

a. Captain Moncrieff having objected to his models being exhibited without his consent at the meeting of the British Association, was informed on the 3rd October, 1868, that they should not be so exhibited again before the adoption of his carriage into the Service. On the 28th October, and again on the 7th November, alluding to his former complaint of the exhibition of his models, he complained that foreign officers had, unknown to him, been permitted to witness experiments, and it was in consequence decided on the 18th November, that notice should in future be given to him in all such cases. It appears, however, that notice had been sent to Captain Moncrieff of the experiments referred to in his letter of the 7th November, but that it did not reach him in time to permit of his being present at them.

Subsequently, on the 21st November, Captain Moncrieff again complained of foreign officers having witnessed further experiments on the preceding day. On enquiry, it appears that after the completion of the experiments by the Ordnance Select Committee towards the end of October, ammunition for 100 rounds had been issued for further trial, and for the instruction of officers and men at the School of Gunnery, and that during the firing of some of these rounds, which were fired at the discretion of the Commandant at Shoeburyness without reference to the War Department, a foreign officer, who had an order of admission to the School of Gunnery, was present.

As the carriage had not been adopted into the Service, and no intimation of its success had been given to Captain Moncrieff, it is to be regretted, after the repeated objections he had made to its being exhibited, that steps were not taken to prevent any practice with his carriage without previous notice being given to him.

b. Photographs of his carriage have been sold by the War Department.

b. Captain Moncrieff's carriage was photographed at his own request, twelve prints of the photographs taken having been furnished to himself, after which, engravings of the carriage having in the meantime appeared in the illustrated papers, prints of these photographs were deposited at the Royal Artillery Institution at Woolwich, in the same manner as photographs of other subjects of professional interest, in order that members of the Institution might purchase them; a limited number of copies were also circulated for official purposes. Only a few had been issued, when Captain Moncrieff's objection was taken, and in recognition of its validity, an order was immediately sent to the Secretary of the Royal Artillery Institution to suspend their further sale.

c. That faith was not kept with him with regard to his reflecting sight.

c. Captain Moncrieff having attached a reflecting sight of his own invention to his gun carriage, in reply to his request that intimation might be given to him in the event of its being applied otherwise than with his carriage, was informed that, if it were so used, his rights of priority should be respected.

Afterwards, owing to the success of Captain Moncrieff's arrangement, a sight was proposed for use in turrets similar in purpose but of a different construction, which had been described in the Journal of the United Service Institution, in 1864. This gave rise to Captain Moncrieff's complaint, and he appears to have been under the impression that his sight was being used; whereas it is reported by the Superintendent of the Royal Gun Factory to be that of another person.

d. Captain Moncrieff considers that he should have some recognised official position.

d. Captain Moncrieff having been requested to state the precise position in which he would wish to be placed, submitted for the consideration of the Committee a written memorandum of propositions, which is annexed to this Report (marked B).

The Committee having considered these propositions and examined into the various statements laid before them by Captain Moncrieff, are of opinion:—

1. That a copy of the Report of the Ordnance Select Committee of the 14th November last, be furnished to Captain Moncrieff, accompanied by an expression of satisfaction on the part of the Secretary of State for War at the skill and perseverance displayed by him, which have resulted in the production of an invention which promises to be of very great importance and advantage to Her Majesty's Service, and at the success which has attended the experiments with the carriage for the 7-ton gun.

2. That Captain Moncrieff be requested to proceed at once with the completion of designs for a carriage upon his system for a 12-ton gun, to be followed by others for lighter guns for land defences, and for such other heavy guns as the Secretary of State for War may desire; and that for this purpose two draughtsmen should be placed at his disposal by the Superintendent of the Royal Carriage Department, to assist him in making the requisite drawings. It is desirable that the two gentlemen named by Captain Moncrieff (Messrs Farley and Baker) should be employed upon this work if they can be spared from their other duties.

3. That as soon as the designs for the 12-ton gun carriage shall be sufficiently advanced, its construction shall be proceeded with as speedily as possible at the Royal Carriage Department, under the superintendence of Captain Moncrieff, and that the Superintendent of the Royal Carriage Department shall be directed to make such alterations from time to time during the construction of the carriage as he may be requested by Captain Moncrieff in writing to make.

4. The Committee recommend that the construction of carriages upon Captain Moncrieff's system for guns of heavier classes than the 12-ton gun be postponed until after the trial with that gun.

5. The Committee further recommend that Captain Moncrieff be placed in official communication with the Director of Works, and that he be allowed to examine all designs of batteries made for the application of guns mounted on his system, that he may have an opportunity of making such remarks thereon as he may desire to offer, and that these remarks, in writing, be submitted to the Fortification and Defence Committees, who will thus have an opportunity of considering them before giving their final approval to the designs, and, if they desire further information, of calling him before them to give it.

6. As regards remuneration, the Committee have to report that previous to their appointment, Captain Moncrieff had made no application for remuneration, and that none had been accorded to him; they consider, however, that it would only be fair to Captain Moncrieff that some arrangement should at once be made with him, and with this view they invited him to communicate to them his ideas on the subject.

Captain Moncrieff has accordingly addressed the annexed letter (marked C), dated the 28th January, 1869, to the President of the Committee, from which it will be seen that the claim he desires to urge on Her Majesty's Government is "founded " solely on their sense of justice and fairness as to that which they consider due to " the years of labour he has spent on his discovery, and to that sense of justice and " fairness alone he appeals."

The Committee, feeling the force of this appeal, and the justice and policy of awarding a liberal reward for an invention of such undoubted value, calculated eventually to produce great saving in the public expenditure, have given the question their most careful consideration, and have to recommend as follows:—

1. That a sum of 500*l.* should be paid to Captain Moncrieff to cover the outlay incurred by him in the experiments made previously to that undertaken by Her Majesty's Government with the 7-ton gun. The Committee were informed by Captain Moncrieff that he had kept no record of his expenditure on this account, but that he thought that sum would cover it.

2. That Captain Moncrieff should receive a sum of 15,000*l.*, as a reward for his invention, and for the use which may be made of it, or of any extension, modification, or application of it, in the public service, Captain Moncrieff undertaking to communicate fully and unreservedly to Her Majesty's Government all improvements, modifications, or applications, of or relating to, his system, of which he considers it susceptible, so that its advantages may be developed to the utmost extent.

The Committee recommend that 10,000*l.* of the above sum should be paid to Captain Moncrieff at once, and the remainder on the conclusion of his employment in the service of Her Majesty's Government, as alluded to in the following paragraph.

3. That Captain Moncrieff should receive remuneration at the rate of 1,000*l.* per annum, commencing from the 13th August, 1867, being the date from which he states that he devoted his time exclusively to the service of Government, and that in return for such remuneration, which should be continued to him so long as Her Majesty's Government may require his services, he should afford all necessary assistance in making and completing the designs for the application of his system, and in superintending the construction of such carriages as the Secretary of State for War may consider necessary to serve as models, or patterns, for the future supply of carriages upon his system for the public service.

In making these recommendations the Committee desire to call attention to the fact that the only experiments of a working nature, and that have not been extemporized merely to exhibit the principles of Captain Moncrieff's system, have been made at the public expense;—that they have had the greatest publicity;—that Captain Moncrieff himself obtained the presence of many distinguished officers, both British and foreign, as well as representatives of the press, at the earlier experiments;—and that through those experiments the invention has attracted the attention of Foreign Governments, who have since been in communication, by their accredited agents, with Captain Moncrieff, relative to the introduction of his system in their respective countries.

Captain Moncrieff having applied to the War Department for advice as to the manner in which he was to meet the overtures of Foreign Governments, was at once

informed that he was entirely free to use his own discretion. He has therefore not been debarred in any way whatever from any advantages he might have derived from the adoption of his system by Foreign Governments, nor is it the opinion of the Committee that he should hereafter be so debarred.

Although the Committee recommend that Captain Moncrieff should have full liberty to use his own discretion, and derive every advantage he can from the adoption of his system by Foreign Governments, they consider that Her Majesty's Government cannot, from the very nature of the invention, undertake to keep it concealed from those governments, or not to allow foreign officers to examine the carriages, and guns mounted on them, or to witness experiments with them after their adoption into the Service ; nor can they undertake to prevent the distribution of photographs or drawings of the guns mounted on Captain Moncrieff's system. They recommend, however, that copies of the working drawings from which the carriages are made should not be given out of the Royal Carriage Department for other purposes than those of Her Majesty's Government, without Captain Moncrieff's consent having been first obtained.

7. The following documents are appended to this Report, for the information of the Secretary of State for War :—

A. Captain Moncrieff's letter, dated 5th December, 1868.

B. Memorandum handed to the Committee by Captain Moncrieff on the 14th January, 1869.

C. Letter addressed by Captain Moncrieff to Lord Northbrook, dated 28th January, 1869.

D. Report of the Ordnance Select Committee, dated 14th November, 1868

NORTHBROOK.

J. L. A. SIMMONS,
Major-Gen. R. E.

J. H. LEFROY,
Major-Gen. R. A.

WM. F. DRUMMOND JERVOIS,
Colonel R. E.

War Office,

3rd February, 1869. $\frac{83}{M}\frac{}{134}$

Note.—Appendices E & F, being letters addressed by Captain Moncrieff to Lord Northbrook on 28th January and 20th February, 1869, respectively, have been added by order of the Secretary of State for War, dated 26th February, 1869, $\frac{83}{M}\frac{}{163}$.

APPENDIX A.

SIR, 12, *Charing Cross, 5th December*, 1868.

In reference to late correspondence regarding my invention, I should like to place before you the extreme difficulty of my position in relation to the War Department, and the way in which the introduction of my invention is retarded, hoping that you will make some enquiry into the matter, and place me on a different footing from the very painful one I now occupy.

After many years' work I left all my own affairs in Scotland, and devoted my time, since the 13th August, 1867, exclusively to the service of the Government.

I have, at the request of the Government, manufactured for them a Moncrieff carriage, for that class of gun which they themselves selected to test my invention, viz., a 7-ton 7-inch muzzle-loading Woolwich gun.

On the 19th May, 1868, the new carriage was tried with success before the Ordnance Select Committee, and, at that time and ever since, I have urged the expediency of enabling me to manufacture a 12-ton gun carriage. I have been invariably defeated in this attempt, and now, more than six months after the first trial, the thing remains much in the same state as it was then.

I have asked for acknowledgment of success with the first carriage; it is not given me. I have asked for the Report of the Ordnance Select Committee; I cannot get it. I have applied for draughtsmen to extend my designs; they are not allowed. While the works of fortification have been stopped for months for my invention, and other manufactures employing hundreds of men held back for it, I am not allowed the control of a single draughtsman to prepare the important designs on which the whole of the contemplated changes hinge..

While Committees are considering the changes which my invention will produce, I have not seen a single plan on which their decisions are taken. And I know that Engineer Officers, who do not know the forms of my carriage (as these forms have not yet been submitted), nor one-half of the applications of which the system is capable, have been employed to design batteries for it, which batteries I have not been consulted about, have never seen, and which possibly may be inapplicable. You cannot, Sir, wonder at my feeling aggrieved at the helpless position in which I am placed, as I cannot be unconscious of the attempt to ignore the only person who is able to give proper and necessary information, and who has a right to be consulted.

There are several other points, besides those above referred to, which add to my difficulties, and I cannot too strongly urge that you will be pleased to order a full enquiry into the whole subject.

I have the honour to be,

Sir,

Your obedient Servant,

A. MONCRIEFF.

To the Right Hon.
The Secretary of State for War.

APPENDIX B.

Memorandum handed to the Committee by Captain Moncrieff, on the 14th January, 1869.

THAT two draughtsmen, viz., Mr. Farley and Mr. Baker, be put entirely under Captain Moncrieff's orders.

That Captain Moncrieff should prepare the necessary designs and working drawings of any applications of his invention to new classes of Artillery, from which drawings the Royal Carriage Department could manufacture, and that he should have the same control over the manufacture of the first carriages made to these drawings that he was allowed to have over the construction of the 7-ton gun carriage.

That a convenient room be placed at Captain Moncrieff's disposal.

That any designs for applying Captain Moncrieff's principle to works, should be first submitted to him before being placed before the Defence or Fortification Committees, or used for the formation of estimates, in order that he may add to these designs such remarks or suggestions as he may consider necessary for the information of the Committees above referred to.

APPENDIX C.

My Lord, 12, *Charing Cross*, 28*th January*, 1869.

Referring to what passed at the last meeting, I beg leave to state, for your Lordship's information, the situation in which I find myself placed.

I have been for many years engaged in carrying out experiments for the perfection of a discovery which I believed would prove of importance, both in respect of economy and efficiency, for the improvement of the armament and the defence of the country.

After the expenditure of much time, labour, and money, I have succeeded in placing before the Government my system, in a shape which I venture to think has satisfied the severe tests which have been applied to it, and its utility and merit I think I may assume is admitted.

It is an acknowledged principle involved in the laws of Patent Right, and Copy Right, that a man has a property in discoveries which are for the general advantage, and that he is entitled to a fair reward for his invention, his labour, and his trouble.

If mine had been a discovery not connected with war, or with the public service, I should have received by law an adequate reward, by the sale or by licenses for the use of my invention. The peculiar character of the discovery in this case necessarily deprives me of this advantage.

In this country the only customers for my invention are the Government, and they are not bound by any Patent Right.

I might indeed dispose of my invention to foreign states, but this of course is a proceeding which I have hitherto been reluctant to adopt.

It is on account of the peculiar situation in which inventors of an improvement like mine are placed, that the Government has been in the habit of giving rewards to those by whose exertions the nation exclusively profits, as in the case of Sir W. Armstrong and others. The measure of that reward, it is true, must ultimately rest with the justice of the Government. But of course it will not be supposed that the Government, on behalf of the nation, would give to an inventor by whom it profits a less reward than that which, in the case of an invention not of a national but of a private nature, he would otherwise derive.

If therefore the Government are satisfied that my invention is one that is worthy of adoption, and that when adopted it will be of public advantage, both in respect of economy and efficiency, I respectfully submit to your Lordship that I should be regarded as a person having property in my invention, and that the Government should treat me substantially, if not legally, as purchasers of my patent rights.

And that above all, as I have communicated to them freely all the details of my invention, they will not, by publishing it and exhibiting it to foreign governments, deprive me of such advantages as I might be entitled to in the foreign market, supposing the English Government should discard my invention.

If, on the other hand, the Government should not yet be entirely satisfied of the merits of my invention, and have not resolved to adopt it, then I am ready most cheerfully to place myself at their disposal to prove, and to perfect, my discovery in all its parts, so that they shall be completely convinced of its utility, and I shall be prepared to carry out at once all your Lordship's directions for that purpose.

Having thus stated briefly the view which I take of my position, I hope your Lordship will not consider that I am unduly pressing any legal claim on your attention. It was necessary, with a view to my patent rights, especially as regards foreign governments, that I should be advised as to my legal position. The claim I desire to urge on the Government is one founded solely on their sense of justice and fairness, as to that which they consider due to the years of labour I have spent on my discovery; on that sense of justice and fairness I wholly and confidently rely, and it is to that alone that I appeal. I feel sure they will not think it right to take advantage of what I have already done, or ask me to do more, without giving me an adequate recompense for the ingenuity, labour, and expenditure which I have already placed, and may hereafter place, at their disposal.

I shall therefore be much obliged if your Lorship will kindly inform me as soon as possible whether there are any further measures which it is desired that I should take, in order to satisfy the Government more completely of the character and merits of my discovery.

I have the honour to be,

Your Lordship's obedient Servant

To the A. MONCRIEFF.

Lord Northbrook,

&c., &c., &c.

APPENDIX D.

ORDNANCE SELECT COMMITTEE.

Committee *Minute* 26,318.
Report No. 5183.

14*th November*, 1868.

Present:

Brigadier-General LEFROY, R.A., *President.*
Captain W. G. LUARD, C.B., R.N., *Vice-President.*
Captain HAMILTON, R.N.
Colonel FREELING, R.E.
Colonel WRAY, C.B., R.A.
Colonel G. SHAW, R.A.
Lieut.-Colonel T. MAYNE, Unatt.
Lieut.-Colonel HEYMAN, R.A., *Secretary.*

Subject:—

Captain Moncrieff's protected barbette traversing carriage.

With reference to W. O minutes
14·7·68 on $\frac{83}{M/79}$
5·11·68 on $\frac{\cdots}{109}$
7·11·68 on $\frac{\cdots}{110}$
and Report No. 5011 on *Minutes* 24,930–982.

COMMITTEE'S REPORT.

The Committee have now the honour to report for the consideration of the Secretary of State for War, the results of the trial which has been made to test the value of Captain Moncrieff's method of mounting heavy ordnance on counterpoised carriages, by which guns are enabled to fire over a high parapet, and in their recoil are brought down below it, so as to be completely concealed from view. The guns are thus supposed to be effectually protected when not in action, and to be kept under cover for the greater part of the time they are in action.

The principal advantages claimed by Captain Moncrieff for his system, are—

1. It absorbs the recoil in such a manner that it is turned to useful account, instead of acting as a destructive force.
2. It takes away horizontal strain from the platform.
3. It gives security from direct fire.
4. It increases lateral range.
5. With equal efficiency, it effects large economy in the construction of works for coast defence.
6. It economises life, and it makes batteries more invisible, and therefore more easily masked before action, and more difficult to attack in action.

As statements have appeared in the public press which are calculated to convey an erroneous impression as to the early history of this invention, the Committee think it their duty to lay before the Secretary of State the real facts of the case.

On the 23rd of October, 1858, Captain Moncrieff, apparently at the personal request of Major-General Sir Richard Dacres, at that time commanding the Royal Artillery in Ireland, communicated very briefly, in writing, the nature of his invention, and the advantages he anticipated it would realize. Sir R. Dacres transmitted the letter to the War Office, and on the 28th of October, 1858, it was referred, by the direction of Major-General Peel, for the consideration and report of the Ordnance Select Committee of that period, and the usual Memo. of War Office regulations on the subject of inventions was sent to Captain Moncrieff by the Secretary, Colonel Pickering, the receipt of which was acknowledged by the inventor, by letter dated 4th November, 1858. From that time up to the

$\frac{83}{M/7}$

2nd March, 1865, a period of more than six years, nothing further was heard of Captain Moncrieff or his invention, but, on the date mentioned, he submitted to the Director of Ordnance a description and drawing of his protected barbette traversing carriage, which were referred for report to the present Ordnance Select Committee on the 9th March, 1865.

Captain Moncrieff, by invitation, attended at Woolwich on the 27th March, 1865, and exhibited a rough model carriage, made to scale, for a 68-pr. gun, in illustration of the method he advocated for mounting guns in open works of defence.

Report 3705, *Minute* 14,927 Although impressed with the apparent ingenuity of the arrangement, the Committee considered it, at that stage of its development, too complicated to fulfil the conditions of the service, and that the advantages expected to be realized were hardly commensurate with the expense which would attend its introduction.

Minute 19,363 In July 1866, Captain Moncrieff again addressed the Secretary of State, and the subject was referred to the Ordnance Select Committee, who, however, replied by minute that they had nothing to add to their Report of 1865, and adhered to the opinion expressed therein.

Minute 19,566 *Minute* 20,536 In August 1866, Captain Moncrieff applied for the loan of a 32-pr. gun, to enable him to conduct an experiment at his own expense in Edinburgh, this request was acceded to, and he reported the completion of a carriage in November following.

In December 1866, by direction of the Secretary of State, Colonel Wray, R.A., proceeded to Edinburgh to inspect and witness a trial of the 32-pr. gun of 48 cwt. on the carriage in question, one extemporised by Captain Moncrieff out of railway material, to illustrate the action of a counterpoise on his principle. The structure was, however, so roughly put together, and the details still so little developed, that the Committee, although fully appreciating the ingenuity of the design, and the partial success attained in the trial, did not at the time feel warranted in recommending the costly experiments that they conceived would be necessary to ascertain whether the principle could be so applied as to meet the conditions of service.

Report 4461, *Minute* 20,849

Minute 22,431 *Report* 4653, *Minute* 22,581 Subsequently, however, viz., in June 1867, on the strong recommendation of the Director of the Engineer Establishment, Chatham, and the favourable view taken by H.R.H. the Field-Marshal Commanding-in-Chief, the Committee, considering that the question was one which it was of importance to set at rest, recommended the construction of a wrought-iron carriage and platform suitable for a 7-ton gun, which was approved, and Captain Moncrieff was in the ensuing month placed in communication with the Superintendent Royal Carriage Department, with a view to the preparation of working drawings, and in order that he might superintend the details of construction as the work progressed.

Report 5011. *Minutes* 24,930, 24,982 The carriage was reported ready in May 1868, and underwent a preliminary trial at the proof butt, Woolwich, on the 19th of that month, and although the slight imperfections due to a first construction were found to attach to the carriage, the trial, which was witnessed by several distinguished foreigners and officers of rank, was pronounced in general terms to have been a success.

After receiving certain alterations and improvements suggested by the preliminary experiment, the carriage and platform were sent in July to Shoeburyness, for an extended trial to test the endurance of the structure, and the facilities of working it under the special conditions of defence for which it is designed.

An emplacement 12 feet deep was prepared by scarping down the inner bank of the sea wall—so as to represent the interior slope of a parapet—the gun and its carriage were placed in this recess and mounted upon a wood platform, placed on the natural surface of the ground. The absence of horizontal strain enables Captain Moncrieff to dispense with the usual concrete foundations; in the present instance the wood platform was simply laid on successive layers of ballast and brushwood.

In this position the carriage has been worked under varied conditions with full and reduced detachments at fixed objects, at moving objects, and at different fixed targets placed at ranges varying from 500 to 2,000 yards, disposed over a range of 120° of a circle. The results are given in a condensed form in the annexed printed abstract.

139 rounds have been fired from the carriage and platform up to date, viz :—

100 with battering charges.
36 with full charges.
2 with 18 lbs. powder.
1 with 7 lbs. powder.

As an important adjunct of his system, although not necessarily always employed, being quite a separate invention, Captain Moncrieff has submitted for consideration a plan of laying the gun by reflection.

The arrangement consists of a reflector placed in front of the trunnions, and a fore sight in front of the reflector. A line through zero on the fore sight and parallel to the axis of the gun passes through two cross wires on the reflectors at their intersection. The fore sight is graduated from zero downwards in yards to the extreme range of the gun, and is set at an angle to allow for permanent deflection. When using the reflecting sight the direction of the gun is given under cover, and as the back sight or intersection of the wires is about the same distance from the eye as it is from the fore sight, while the object aimed at is reflected in the same plane as both, Captain Moncrieff conjectures that in many cases, better aiming will be obtained by the reflecting than by the ordinary mode of sighting.

Captain Moncrieff has also proposed an arrangement of pickets by which the gun may be directed at a moving object, the proper elevation and line being given while the gun is down under cover; this system, although giving promise of useful application, is not yet perfected, and requires to be matured in detail.

With regard, however, to Captain Moncrieff's system of mounting heavy ordnance, so far as concerns the general arrangement of carriage and platform and means of traversing, the Committee are now prepared to express their opinion that the method has been sufficiently tried to be pronounced susceptible of service application up to guns of 7 tons weight.

They desire first to call the attention of the Secretary of State for War to the originality and ingenuity of the conception and the mechanical ability with which Captain Moncrieff has overcome all difficulties, and, with the aid of the Supt. Royal Carriage Department, produced a carriage and platform for a 7-ton gun, which seems likely to require little or no further alteration.

They recommend, however, that the working drawings be carefully revised before drawings are prepared for sealing.

It is not the duty of the O. S. Committee to define to what extent, or in what situations this method of mounting guns with *earth* protection should supersede other methods with iron protection, but they are satisfied that it may do so to a considerable degree, and probably be extended to the heaviest calibres of ordnance, and with a view to a careful comparison of all the elements of cost that enter into works and armaments fitted on the one hand with shields, carriages, and platforms, of the ordinary character, on the other with Moncrieff's carriages and earthen protection, they submit that the Department of Works be instructed to select, as an example, some situation well adapted for the Moncrieff system of mounting, and to draw up a full comparison of cost including every detail of equipment for a battery of not less than 5 heavy guns.

The Committee further recommend that Captain Moncrieff be called upon to prepare drawings for mounting 12, 18, and 23-ton guns on the same principle, for consideration, as early as possible.

(Signed) J. H. LEFROY,
Brigadier-General, R. A.,
President, O. S. C.

2673. Captain Moncrieff's protected barbette traversing carriage

Secretary submits the results of the trials of Captain Moncrieff's carriage at Shoeburyness, in continuation of those reported on *Minute* 25,819, together with the remarks of the Supt. Shoeburyness.

On 2. 10. 68., 31 rounds of battering charges were fired, the last 15 being timed.

At the 2nd round the left lever handle flew round several times with great violence, due to its tight fit on the axle; the lever was removed with difficulty.

At 3rd round the handle of right lever was removed, and the left was out of gear.

The first 10 rounds fired for rapidity at 1,000 yards range, with a detachment of 1 officer, 1 N. C. officer and 9 gunners, occupied 21 minutes 27 seconds from the word "load," some time being lost from the break not acting quickly enough; the practice was good.

Five rounds were then fired, with a reduced detachment of 3 men, in 15 minutes 45 seconds.

One round (3) hit the target.

Remarks. The detachment had only been drilled one hour at this carriage, and were far from expert.

No difficulty was at any time experienced in working the gun. A rope sponge and telescopic wood rammer were used, and it was found necessary to depress the muzzle after each round in order to load readily. On recoiling, the counterpoise was found to strike the muzzle with some violence, thus forcing the breech down on the stool-bed. An attempt was made to obviate this by lashing the breech, quoin, &c., but it was found better merely to interpose some yielding material between the breech and stool-bed, so as to lessen the blow.

After the fifth round, the gun was laid by the pointers attached to the trucks, and the elevation given by the trunnion pointer.

The reflecting sight, though very useful, was not adapted for firing at a number of targets, as was tried on this occasion, the different targets not being readily distinguished.

The new break arrangement, and gear for running up and back, answered perfectly when understood. At the 32nd round it was forgotten to elevate the gun again after loading, and the muzzle consequently jammed against the parapet with some violence when run up. The gun was elevated, and when the breaks were released, rose to its proper place. The shot was found to have moved. This could be obviated in another carriage by some method of loading which would not necessite the depression of the gun.

9. 10. 68. Practice was first carried on for rapidity and accuracy at targets at various ranges.

At first round the left pawl handle broke, but the portion remaining was made to answer perfectly. This round was by error fired at 2° depression. The next 10 rounds were fired (with battering charges) in 18 minutes 50 seconds, or an average of 1 minute 53 seconds a round.

Five rounds were fired, with 14 lbs. charges, in 9 minutes 20 seconds, or at a rate of 1 minute 52 seconds a round.

Practice was then carried on at the moving target, the size being 6 feet × 6 feet, and the rate about 3 miles an hour.

10 rounds of 14 lbs. charges were fired at the rate of 2 minutes 2 seconds per round, the average length of time that the gun was exposed each round being 26·4 seconds.

6 rounds were fired (14 lbs.) at the target moving about 7 miles an hour, at a rate of 1 minute 33 seconds a round, the gun being exposed on an average 29·5 seconds.

Several shovels full of dirt having been thrown over the working parts of the carriage, when in the loading position, at the word "load," the detachment cleared the racks, pinions, &c., and loaded (battering charge). When run up, the gun stuck at first, and had to be run back a little, when it run up easily. First round in 8 minutes 30 seconds. When in the firing position for the fifth round, sand was again thrown on the carriage, and 6 rounds fired after clearing it away. The whole time occupied in firing these 10 rounds (deducting stoppages for range not being clear) was 29 minutes 2 seconds, or 2 minutes 54 seconds a round.

Remarks. When firing at the moving target, the gun was laid by means of pickets previously laid out, the racers being marked and numbered to correspond with the different pickets. The officer directed the fire of the gun by means of these pickets with as much certainty as if laying it by the tangent scale on the object itself, with the advantage that the proper elevation and line were given with the gun down under cover, and it was only raised into the firing position just before the object approached the pre-determined line of fire.

After the dirt was thrown on the carriage, the delay in firing the first time was due to the men not knowing the vulnerable parts; there was no delay the second time.

A rope rammer was employed and answered better than the telescopic one.

With 14 lbs. charges the gun does not recoil enough to allow of easy loading: this could be readily remedied.

The gun was made "ready" before running up, thus saving the time lost on previous trial. After the practice the right traversing wheel (cast iron) was found to be broken, probably by the jar, or the dirt between the teeth.

The rope sponge was too short, being probably intended for a 6½ ton gun.

The mouth of the pit was narrowed by overhanging iron plates to about the same diameter as the racers without interfering with the working of the gun.

16. 10. 68. Practice was carried on in the presence of H. R. H. the Field-Marshal Commanding-in-Chief.

10 rounds (22 lbs.) were fired for accuracy at various ranges, laying by marks on the racers and the trunnion scale, corrected for line by the reflecting sight, the latter being graduated for service charges only.

5 rounds were fired for rapidity in 5 minutes 30 seconds, and 2 rounds at 10° elevation.

Remarks. Practically No. 1 is quite sufficiently covered when laying by the tangent scale. A better arrangement of steps for mounting and dismounting is required, and the small side platform should be enlarged, as it is hardly safe at present to stand there while the gun is fired.

27. 10. 68. 10 rounds were fired in the presence of the Earl of Mayo and Staff, 7 with battering and 3 with service charges.

3. 11. 68. 8 battering and 4 service charges were fired, some in the presence of Lord Napier of Magdala and Staff. Five of these rounds were fired in 4 minutes 36 seconds at one target, the time being taken from the word "run up." Average time per round 55·2 seconds.

General Remarks.—The elevating screw works far too loosely, and has a tendency to run down.

The teeth of the pinions and curved racks are burred and require filing; beyond this and the loosening of a few unimportant rivets, the whole arrangement appears as serviceable as when first received.

Very great care and judgment are required in running up to prevent loss of time from having to use the levers.

The following are the rounds which have been fired from this carriage.

Date.	Service Rounds, 14 lbs.	Battering Rounds, 22 lbs.	Total.	Remarks.
..	..	..	2	1 of 7 lbs., and 1 of 18 lbs. at proof-butt.
4. 5. 68	1	2	3	
19. 5. 68	3	6	9	At proof-butt.
14. 8. 68	1	..	1	At Shoeburyness.
17. 8. 68	..	..	1	18 lbs. charge.
18. 8. 68	..	1	1	At Shoeburyness.
19. 8. 68	2	8	10	,,
2. 10. 68	1	30	31	,,
9. 10. 68	21	21	42	,,
16. 10. 68	..	17	17	,,
27. 10. 68	3	7	10	,,
3. 11. 68	4	8	12	,,
Total ..	36	100	139	

APPENDIX E.

My Lord, 12, *Charing Cross, London, 28th January*, 1869.

In reference to what passed to-day, when I was before your Committee, I now beg to request that the enclosed letter* should be substituted for my letters of dates 12th January and 21st January.

With regard to the question put to me to-day, as to what the different models have cost me in money, I regret that I am still unable to state any sum that would be satisfactory to myself.

Any one conversant with the process that such experiments as mine go through, will easily understand this difficulty. For instance, two men were engaged almost exclusively on one of my working models (viz., the one made to one-sixth scale of a 95 cwt. gun) for a year, in altering, experimenting, &c. It would be quite impossible, however, for me to state what this and the material used cost me in money; and as I unfortunately do not keep accounts, and the process has been going on for so long a time, I feel quite unable to state what my actual expenditure has been,—still less could I, if I were required to do so, now estimate the time, travelling expenses, &c.

I should, therefore, be glad if the results could be considered without going into the details of the process which my means restricted me to.

Not being a manufacturer, I had sometimes to exercise as much ingenuity in making shifts to meet the requirements with what means I possessed, as I had to exercise on the experiments themselves.

I have the honour to be,

My Lord,

Your Lordship's obedient Servant,

A. MONCRIEFF.

The Lord Northbrook,
&c. &c. &c.

APPENDIX F.

My Lord, 12, *Charing Cross, 20th February*, 1869.

There is one misapprehension in your Report that I feel it my duty to call your attention to, as I am quoted as having made a statement that is not quite in accordance with the facts. These facts are well known to a great many friends who have been with me, watched my progress, and aided me, and I would rather not have on record in the Report that I made an incorrect statement.

The question which I understood your Lordship to ask me was, whether 500*l.* would cover the expense I had been at for models and modelling. I answered that it might possibly do so, as these expenses had not been very great. But in the Report I am made to say that 500*l.* would cover the outlay incurred by me in the experiments made previously to that undertaken by Her Majesty's Government.

Without taking into account my own time, which, as a civil engineer, I am entitled to charge for, I have been at considerable outlay on account of, and in connection with, experiments carried on by me in Ireland, Scotland, and England, between 1857 and 1867, and I am exceedingly sorry that I left an impression that 500*l.* would cover all these expenses. The expense of the modelling and material forms but a small part of the outlay I have been at. I am quite certain that, during the 10 years previous to coming to Woolwich, I spent in connection with my experiments, in designs, models, travelling, &c., much more money than has been expended by Her Majesty's Government on the experimental 7-ton gun carriage that is now at Shoeburyness.

I should not have referred to this had not a meaning been inadvertently put on my words which I did not intend to convey; and I am sure that your Lordship and the Committee would wish to be correctly informed of this fact.

I have the honour to be,

My Lord,

Your Lordship's obedient Servant,

A. MONCRIEFF.

The Lord Northbrook,
&c. &c. &c.

* Appendix C.

REPORT OF COMMITTEE

APPOINTED TO CONSIDER

CAPTAIN MONCRIEFF'S LETTER

OF

5TH DECEMBER, 1868.

Presented to both Houses of Parliament by Command of Her Majesty, 1869.

LONDON:
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